THE ORDINARY AND THE POOR IN EIGHTEENTH-CENTURY DELAWARE EXCAVATIONS AT THE AUGUSTINE CREEK NORTH AND SOUTH SITES (7NC-G-144 AND 7NC-G-145)

By

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THE CULTURAL RESOURCE GROUP
LOUIS BERGER & ASSOCIATES, INC.
East Orange, New Jersey

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Eugene E. Abbott
Director of Planning
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ABSTRACT

Most of the people who lived in Delaware 250 years ago have long been forgotten, and we know almost nothing about their lives. A few of the rich and famous are remembered for their public acts or the great houses they built, but the ordinary men and women who worked the land and raised their families in obscurity have faded from our consciousness. The construction of State Highway 1 across Augustine Creek in New Castle County has brought the lives of several ordinary people back from oblivion. On behalf of the Delaware Department of Transportation (DelDOT), archaeologists from the Cultural Resource Group of Louis Berger & Associates, Inc. (Berger), have conducted excavations at archaeological sites on both banks of Augustine Creek in New Castle County. The Augustine Creek North Site was a small tenant farm occupied between about 1750 and 1810. Most of this site was outside the final highway right-of-way, so only part of it was excavated; but through this partial excavation, along with what has been revealed about the site through earlier testing and documentary research, we have still learned much about how these humble people probably lived. The Augustine Creek South Site was a farm established by Samuel and Henrietta Mahoe in the 1720s. Samuel died in 1749, but Henrietta continued to live at the site (with her second husband after 1755) until the site was abandoned around 1760. At this site the archaeologists found remains of a house and other buildings, thousands of artifacts, and evidence of cloth manufacture. By combining the archaeology of these two sites with extensive documentary research, especially in the probate inventories and the records of the Orphans' Court, it has been possible to assemble a picture of what the lives of ordinary Delawareans were like in the 1700s: the houses they lived in, the farms they built, the objects they made and owned, and the foods they ate. Both sites were also occupied, on occasion, in prehistoric times, and these people also left traces of their way of life.

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The Cultural Resource Group of Berger had direct responsibility for the study. The Berger staff was under the overall direction of John Hotopp, Group Vice President. Charles H. LeeDecker served as Project Manager. John Bedell was the Principal Investigator. Historical research was carried out by Ingrid Wuebber, Eric Griffitts, and John Bedell. Robert Jacoby and Earl Proper served as Field Supervisors during the evaluations of these sites, and Rick Vernay during the excavations. The field crew consisted of Lisa Adams, Wyn Bedall, Bruce Bourcy, Theresa Brannon, Joelle Browning, Andrea Denight, Heather Fener, Rowan Flad, Amy Freyburger, Alex Gall, David Gilmour, Keith Googins, Kimberly Pokorosky, Christy Roper, Laurie Rudder, Robert Shaw, Catherine Skocik, James Skocik, Paul Stansfield, Jane Taylor, Douglas Tilley, Caroline Van Dyke, and Lee Weber. Laboratory supervision was provided by Sharla Azizi. Analysis of the artifacts was carried out by Meta Janowitz, Mallory Gordon, Gerard Scharfenberger, and Byron Simmons.

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I. INTRODUCTION

A. BY THE BANKS OF AUGUSTINE CREEK

In the 1720s, Samuel and Henrietta Mahoe moved to Delaware and bought land on the south bank of Augustine Creek in St. Georges Hundred. Their property measured 140 acres and its price was £180. The creek, although small, provided a reliable source of water, and the soil was good. Samuel Mahoe was both a farmer and a weaver. His name was spelled "Maho" or "Mahoe" by his British-American neighbors, but his own family spelled it "Mahault." They were Huguenots, French Protestants who had fled religious persecution and settled in the New York area. We do not know why Samuel Mahoe moved to Delaware, but he may have been drawn by the inexpensive land still available in the thinly settled region south of New Castle. Henrietta was probably a Huguenot as well, and she was probably also born in New York or New Jersey.

Samuel and Henrietta Mahoe built a small farm on their land, placing their house and barns on the bluff overlooking the swamps along the creek (Figure 1). It was a location any European settler might have chosen, close to the stream but 20 feet above the floodwaters and the marshes, with the King's Highway from New Castle to Lewes only a hundred yards away. Except for the bluff along the creek, the countryside was flat, and the soil was productive. The Mahoes planted crops and raised cattle, pigs, and sheep, and Samuel wove cloth in a shed built to hold his loom. As far as we can tell, they were very ordinary Delawareans, living in much the same way and owning the same kinds of things as thousands of other people.

But life was not to be easy for the Mahoes. Money was tight, and by 1733 they had sold 18 acres of their best land to a neighbor. In that year, still troubled by money problems, they had to mortgage their remaining 122 acres to a wealthy speculator for £59, less than a third of what they had paid for the land seven years earlier. As far as we know, Samuel and Henrietta had no children who survived past infancy. In 1749 Samuel Mahoe died. Henrietta carried on alone for a while, going to court to have Samuel's apprentice weaver, 14-year-old John Harding, bound in her name. In 1755 she was remarried, to a Thomas Wallace, about whom we know very little. Someone, probably Henrietta and Thomas Wallace, continued to live at the farm on Augustine Creek until about 1760. Signs of cloth manufacture continue at the site of the farm, so it is possible that Thomas was also a weaver. The Wallaces were never able to pay off the mortgage, however, and since there were no heirs to take over the farm, in 1759 it had to be sold. The farm was abandoned. The land, of course, remained in use, but the farm buildings were torn down, moved, or just left to rot, and the spot where Samuel, Henrietta, and Thomas had lived was plowed over. By the time America gained its independence, there was nothing left of the farm on the south bank of Augustine Creek but a few potsherds in the soil to show that anyone had ever lived there.

Around 1750, or perhaps a little before, a house was built on the north bank of Augustine Creek directly across from the Mahoe place, on land belonging to Abraham Pierce (Figure 2; Plate 2). The people who lived in the house were renters, and for this reason we do not know their names. The plot they lived on measured only 18 acres. Although the previous 25 years had seen great economic development in Delaware, this new house was probably smaller and shoddier than the Mahoes'. It was built of logs rather than sawn boards, and its small size and lack of refinement marked it as the house of a poor family. An even more obvious sign of poverty, for people of the time, was the location of the house. The Mahoes had built on a bluff, raised well above the creek and the wet ground on its banks. But the north bank of the creek was low, with a long, gentle slope rising up northward. The house was placed at the foot of the slope, right on the edge of the swamp, so close that water from spring floods would probably have lapped around the front door. Europeans of the eighteenth century considered swamps unhealthy, and no one who could have afforded to build elsewhere would have chosen such a low, swampy site, close to mosquitos and miasmic vapors. Only poor tenants lived in such places. In nineteenth-century Delaware the houses built in the swamps were often those of African Americans or Native Americans, and the people who lived on the north bank of Augustine Creek may have been black or Indian. Whoever they were, by 1810 they were gone. Their farm, like the one on the south bank, was torn down and forgotten and the site plowed under, and for two centuries corn and wheat grew over their former home.

These two farms were not destined to be wholly forgotten, however. Their memory was revived by the construction of a new road. In the spring of 1995, archaeologists, including the authors, came to Augustine Creek looking for sites in the path of State Route 1, a new highway that will run from Wilmington and I-95 to the Delaware beaches. On the south bank the highway right-of-way crossed a lot that had grown up in grass, briars, and mimosa trees. Where the ground is hidden by grass, the way to find archaeological sites is by shovel testing. You dig small holes at regular intervals, put the soil through a screen, and look for artifacts.

Many things turned up in the screens from shovel testing on this overgrown lot, and small pieces of brick and pottery revealed the presence of the Mahoe/Wallace farm. Some of the pottery was identified as white salt-glazed stoneware, a type made only in the eighteenth century, so we knew we had found a very old farm indeed. Stone flakes and a stone spearpoint showed that Indians had lived on the same site even further back in the past. Since we had not yet learned anything about the Mahoes or the Wallaces, we called the site the Augustine Creek South Site; the state assigned it the site number 7NC-G-145 (Plate 3).

On the north bank of the creek the land was part of an active farm, and the soil had just been plowed when we came to do our survey. Plowing makes the archaeologists' job much easier, because when the bare dirt is exposed a good rain will wash clear the artifacts lying on the surface, and most sites can be found without digging at all. The old tenant farm was certainly not hard to find. In an area measuring about 20 by 60 yards we found hundreds of artifacts lying on the surface, including sherds of white salt-glazed stoneware, creamware (a kind of refined ceramic made from 1762 to about 1820), and pearlware (another refined ware made from 1775 to about 1830). These ceramic sherds suggested a rather long occupation span for such a small site, from 1750 or earlier to after 1800. We also found a triangular stone knife, so we knew that Indians had also once lived on the north bank of the creek. With a singular lack of imagination, we called this site the Augustine Creek North Site. It was assigned the site number 7NC-G-144.

B. HISTORY IN THE GROUND

The time when the two farms on Augustine Creek were occupied, from 1726 to about 1810, was an era of extraordinary change. Americans who lived through these years saw the Enlightenment, the American Revolution, the French Revolution, the beginnings of the Industrial Revolution, and a great number of other dramatic developments that many people believe led to the creation of the modern world. But what exactly is meant by the "creation of the modern world"? What changes can we point to that separate our age from former ages—from the Medieval period, for example, or from Roman times? Historians have written extensively about what developments define the modern world: science, democracy, industrialization, urbanization, consumerism. A problem most of these explanations share is that they describe changes in our whole society based on the experience of only some of its members. If we focus on the growth of industry and cities, for example, we exclude farmers. If we emphasize the rise of science or democracy, we exclude the millions who did not believe in these ideas. The eighteenth century saw very great changes in people's material lives, such as new kinds of houses, clothes, dishes, and furniture, and some historians have emphasized the new consumer culture as a hallmark of modernity. But millions of Americans could not afford to become consumers, and some of them lived in their log cabins, ate their traditional foods, and wore home-spun clothes for a century after the modern consumer culture had allegedly been born. And what of slaves, free blacks, and Indians who fled the east, or those who stayed behind—do they have any part in the creation of modernity? Can we point to any important changes that everyone in eighteenth-century America experienced in roughly the same way? To put it another way, was Revolutionary America one culture, or many?

To answer these questions we must study many kinds of people from the past: black, white, red, and every other shade, from the wealthiest and most powerful to the most humble and obscure. The wealthy and powerful are well documented, but the humble are harder to reach, as are the members of minority ethnic groups. To help us learn something about the lives of ordinary people from past centuries we have two main aids, written records and material objects. For ordinary people, the material objects that provide information are very often the things recovered through archaeology. Standing houses from the eighteenth century have been much studied, but archaeology and some records of the time suggest that even the poorest standing houses are nicer than what was normal during the period. The average house is accessible to us only through archaeology. Similarly, the ceramics and furniture surviving in museums, even the pieces that are judged "simple" or "folk," also belonged mostly to the better-off. Because the belongings of the poor are unlikely to have survived above the ground, archaeology can provide a uniquely democratic perspective on the past. We can find the houses and trash pits of people whose words, even names, have been lost.

The democratic potential of archaeology is clearly shown in the archaeology of the two farms on Augustine Creek, where we explored the homes of an ordinary farmer and a poor tenant. What we know about Samuel and Henrietta Mahoe and Thomas Wallace from documents could be written on a 3x5 index card, and we know almost nothing about the tenants who lived on the north side. But from the things they left in the ground we have learned a great deal about these long-dead people. We have learned about the houses they lived in, the foods they ate, the dishes and tools they used, and something about their attitude toward the great intellectual changes of their own day.

Because of the unique historical value of the archaeological record, some of the laws that protect other parts of our historical heritage also cover archaeological sites. Federally funded public works projects are not supposed to destroy valuable archaeological sites, and if the sites cannot be avoided they must be excavated to preserve the historical information they contain. The construction of Delaware State Route 1 has been partly financed with federal funds, and archaeological research has therefore been part of the project from its beginnings. Archaeology on such large projects is usually conducted in three stages. The first stage is a search for sites, what we call survey. If sites are found, any that might contain important information about

the past are evaluated in a second stage to determine whether they meet the requirements for a "significant" site. Sites that are found to be significant records are either avoided by the planned construction, or, if that is not possible, extensively excavated. This third stage is generally referred to as data recovery. The evaluation of significance follows guidelines laid out in state planning documents (Ames et al. 1987; De Cunzo and Catts 1990). Sites can be chosen for excavation because of their scientific potential, which is defined as their ability to help answer important questions about the past, or because of their importance to the heritage of a community or ethnic group. The question of which sites are significant should be considered from many perspectives, and the input of the public is valued and encouraged.

C. THE SITES

1. Augustine Creek North: The Tenant Farm

The Augustine Creek North and South sites were discovered in the spring of 1995. Both sites seemed interesting, and evaluation to determine if they were "significant" followed in the fall of the same year (Bedell et al. 1997). These evaluations included test excavations on the sites and documentary research into the history of the properties. The excavations took the form of test units measuring one meter square, dug by hand across the sites at regular intervals.[1]

During the evaluation of the Augustine Creek North Site, 22 test units were excavated, about a one percent sample of the site (Figure 3; Plate 4). The test units were placed 10 meters, or just over 10 yards, apart, creating a 40- by 50-meter pattern. Like most colonial farm sites in North America, and all those that have been excavated in Delaware, the sites on Augustine Creek had been plowed over many times. Plowing mixes up the top 10 inches or so of the soil into an even brown topsoil that we call the plowzone. The test units at Augustine Creek North were dug only to the base of the plowzone. The plowzone was shallow in the northern, upslope portion of the site, but on the edge of the creek it had built up into a massive deposit 4 feet 5 inches thick as a result of soil washing down the slope. About 1,000 historic artifacts were found on the site during the evaluation, as well as about 2,000 small brick fragments and 52 Indian artifacts. The most common artifacts were sherds of coarse red earthenware, which was commonly used to make jars, milk pans, and other utilitarian pots from the first European settlement until the Civil War, and creamware, a refined ceramic used to make plates, teacups, and other tablewares and teawares that was common in the 1770 to 1820 period. Sherds of pearlware, another refined earthenware, were also found, including 18 sherds of a variety not made until after 1795. Some artifacts from earlier in the century were found as well, including sherds of white salt-glazed stoneware (1720 to 1805) and "Midlands mottled" ware (1680 to 1750). The artifacts therefore suggested a rather long time span for the site, from before 1750 to after 1800. We have considered the possibility that the site was occupied twice, once in the years around 1750 and again around 1800, both times for only a few years, and we have some reasons to believe that this is in fact what happened.

[1] North American archaeologists like to use the metric system of measurement when excavating prehistoric sites because it makes their work comparable to work on similar sites around the world. Both of the Augustine Creek sites included prehistoric and historic occupations, so work was begun using the metric system. By the time it was known that only the historic component of the Augustine Creek South Site would be excavated, the site grid had already been established using the metric system. Metric measurements were therefore used during the excavations. In the discussion of the historic sites, however, the finds are described in English measurements. Rather than convert the measurements of the excavation units to odd English figures, the metric measurements have been retained. One meter is approximately 3.28 feet.

Our notion that the Augustine Creek North Site had been occupied on two separate occasions, rather than continuously, came from some discoveries in the archives. Deeds preserved at the New Castle County courthouse showed that the property had belonged to the Pierce family, who owned large amounts of land in the vicinity, since the 1720s. In 1748 Abraham Pierce had the deed to the property, which then measured 270 acres, copied and recorded in New Castle (New Castle County [NCC] Warrants and Surveys, Folder P-2:16a), and in 1760 he became its sole owner. The property was said to be bounded on the south by "Augustine's Creek alias Cannoe Branch" and on the west by the King's Road, which is now U.S. 13 (NCC Deed Book U-1:102). Abraham Pierce died in 1769, and after a period of administration by guardians of his minor children, and a lengthy dispute among the heirs, the Pierce estate was divided among the heirs in 1790 (NCC Orphans' Court D-1:247, 275; F-1:207, 210, 219). Following the usual procedure, they appointed five freeholders and a surveyor to divide their father's real estate, which was calculated to comprise 147 acres and 119 perches (1 perch=1 rod=16.5 feet) of land. The freeholders returned with a partition containing seven lots, each lot adjoining either Canoe Branch or the King's Road. Site 7NC-G-144 was included in Lot No. 3. Lot No. 3 was a parcel of cleared land lying along Canoe Branch, with no frontage on the King's Road. It contained 18 acres and 59 perches of land and included an apple orchard. No house or other structure is mentioned in the deed, and since the presence of a house would have had an important bearing on the value of the lot, we can assume that no house was present. Lot No. 3 was assigned to Sarah Dains, one of Abraham's daughters (NCC Deed Book M-2:330). Sarah Dains retained ownership of the property until 1811, but she lived elsewhere. After she died, in 1811, her children sold the plot to Jacob Vandergrift, a local farmer, for $350 (NCC Deed Book W-3:21).

Since the Augustine Creek North Site was certainly occupied both before and after 1790, the absence of a house from the description is good evidence that the site was abandoned for a time. (The only house mentioned in the division among the heirs is Abraham Pierce's old house, which was on Lot 1, fronting the Wilmington to Lewes Road several hundred yards north of Site 7NC-G-144). The property must have been leased again by Dains after she acquired the title. Two occupations of the site, one by tenants of Abraham Pierce before 1768 and one by tenants of his daughter Sarah between 1790 and 1811, seems the best interpretation of both the archaeological and the documentary evidence.

The archaeological findings therefore agreed well with the documentary record, but we were still not satisfied with the result. The artifacts we had used to date the site had all been found in the plowzone. No building foundations, pits, trash deposits, or other "features" were found. The archaeologists believed that the site might be important enough to require excavation if such features were present, but not otherwise. To search for such features, it was decided to return to the site in the fall of 1996 to conduct more testing (Bedell 1997a). At that time a backhoe with a smooth bucket was used to clear the plowzone from strips, each 3 feet wide, running across the site parallel to the stream (see Figure 3). This technique allowed us to look for features across a larger part of the site while preserving most of the plowzone on the site for excavation in any future work.

These trenches did expose a historic feature, a small cellar 6 feet wide and 10 feet long, designated Feature 1. We divided this feature in half, and most of the eastern half was excavated. A possible prehistoric pit feature was also found, which we had not expected, given the very small number of prehistoric artifacts on the site. The presence of pit features made it more likely that we could learn basic information about the Native Americans who visited the site, including when they were there (since none of the artifacts could be dated) and what they had been doing. After this additional work, it was agreed that both the historic farm and the possible Native American camp could tell us much about the past. In terms of laws and regulations, the site was considered eligible for listing in the National Register of Historic Places under Criterion D, because it had the potential to contribute to our knowledge of the region's past, specifically, by answering questions raised in Delaware's state preservation plans about household and regional settlement patterns in prehistoric times and the domestic lives of rural households in the eighteenth century (Custer 1994; De Cunzo and Catts 1990). Plans were therefore made for the excavations that took place in the spring of 1997, and a formal

research design (Appendix G) was developed specifying what we were hoping to learn and how we would go about trying to learn it.

2. Augustine Creek South: The Mahoe/Wallace Farm

a. Fieldwork

The archaeology at the Augustine Creek South Site followed a similar pattern. The first test excavations were done in August 1995, when the site was terribly dry and the soil had been baked to the consistency of a sidewalk. At that time, twelve 1x1-meter test units were dug (Figure 4). These units showed that a thin scatter of prehistoric artifacts, mostly stone flakes but including a few small potsherds, was present along the bluff edge throughout the highway corridor. Historic artifacts were concentrated on a low hill that was actually just outside the highway corridor but within the area where DelDOT proposed to build a new wetland to replace those that would be filled in during construction of State Route 1. These artifacts included white salt-glazed stoneware and other artifacts dating to the mid-eighteenth century, but none of the creamware and pearlware common on sites dating after 1770. The historic site therefore appeared to date to the 1730 to 1770 period. As on the north side, no features were found during the testing, so excavators returned to the site with a backhoe in the fall of 1996 to search for them (Bedell 1997b). Five trenches were dug. The trenches were about 1 meter wide, the width of the backhoe bucket, and they were spaced 4 meters apart so as to preserve most of the plowzone for possible future excavation. They were laid out to explore all of the area where a high density of historic artifacts had been found. The trenches exposed several historic features, including two large postholes from a post-in-the-ground building and a large cellar hole (Figure 5). No ancient Native American features were uncovered. Since the only Native American remains found at the site were a few artifacts from the plowzone, only the historic European site was thought to be significant under federal and state law. The historic farm seemed to have great potential for informing us about Delaware's history. Dating back to around 1730, the farm is one of the oldest to be excavated in the state. It included the large cellar and other features, and it belonged to ordinary people. A research design was written (Appendix F) and plans were made for the excavation, which was carried out in the spring of 1997 at the same time as the excavation of the Augustine Creek North Site.

b. Documentary Research

Historical research done at the same time traced the ownership history of the property, which turned out to be fascinating. The farm had been part of an enormous grant made in 1670 by Lord Baltimore to Augustine Herman, a famous colonial entrepreneur, mapmaker, and real estate speculator who had emigrated from Prague to New Amsterdam in 1633. The grant included everything between St. Georges Creek and the Appoquinimink River from the Delaware River westward to Bohemia Manor, in what is now Maryland—that is, all of the future St. Georges Hundred. However, Herman was never able to make good on the patent (Conrad 1908:14; Scharf 1888:985). The first certain mention in the records of the 100-acre parcel on which Samuel Mahoe built his farm is in 1697, when William Patterson sold it to Thomas Rothwell. After passing through several other owners, all of them absentee speculators, the property ended up in the hands of Hance Hanson.

In 1726 Hance Hanson sold the tract, then said to comprise 104 acres, plus a separate 18-acre tract on the west side of the King's Road, to William Peterson or Petterson (NCC Deed Book H:76). The following year, William Peterson conveyed the same two parcels to Samuel and Henrietta Mahoe for £180 (NCC Deed Book H-1:175). Mahoe had been in Delaware since at least 1722, when he had purchased 60 acres of land near Reading Island (NCC Deed Book G-1:40). In 1722 Mahoe had called himself a weaver, but in 1727 he preferred "yeoman," meaning a property-owning farmer. We searched long and hard in the Delaware and Pennsylvania records for traces of the Mahoe family, thinking that they were Scots-Irish immigrants. We had no luck. Then, by chance, we happened to be looking in the index of a collection of ships' passenger lists and

came across the name "Mahault." Suddenly it was clear to us that Mahoe had not been Scots-Irish at all, but a French Protestant, or Huguenot. A search of books about the Huguenot community quickly showed that the center of their settlement in the Middle Atlantic region was New York, where they founded the town of New Rochelle (Finnell 1995). Among the Huguenot records we found only a handful of people named Mahault or Mahoult. The records of the Dutch Reformed Church in New York record that an Anna Mahoult married Jean Blanchard of New Jersey there in 1695. According to this record, Anna Mahoult was "now living at New Castle" (Boyer 1978:235; Shute 1985:27), so the Mahoe connection to Delaware predated Samuel's arrival. In 1697 a "Marie Maho" married Pierre Vergeraus of New Rochelle at the French Church in New York City; the French church provided a focal point for Huguenot immigrants in this period, and many went there to be married (Wittmeyer 1968:54). The only male with the name to appear in the records was Etienne Mahault, who came from St. Christopher in the West Indies in 1671 and settled on Staten Island, where he died in 1703 (Filby 1981:211, 294). The simplest explanation of these references is that Etienne was the father of Anna, Marie, and Samuel.

Samuel and Henrietta had other connections with the Huguenot community, both within Delaware and beyond. According to an Orphans' Court record, Samuel's only surviving sister was married to a man named Mathew Rue (the sister's name is not given). Rue was a shortened form of the Huguenot name "Leroux." The only Mathew Rue we could identify lived in Monmouth County, New Jersey; this Mathew Rue had a wife named Elizabeth and seven children, including a son named Samuel. Among the Mahoes' neighbors in St. Georges Hundred was a blacksmith named Peter Leroux, who was almost certainly Mathew Rue's brother (Hornor 1974:231). All of these connections remind us that the Mahoes and people like them lived within a complicated network of family ties.

Sometime between 1727 and 1733, Samuel Mahoe sold his smallest property, measuring 18 acres, to Jacob Read (NCC Deed Book T-1:211). The Deed Books record that in May 1733, the Mahoes sold the rest of their land—two tracts, one containing 104 acres and the other containing 46.121 acres—to Francis and Henrietta Land (NCC Deed Book T-1:211). However, this paper transaction was really just a cover, because at the same time, Francis Land and Samuel and Henrietta Mahoe made a deed of defeasance. This deed required Samuel Mahoe to pay Francis Land, or his heirs, £59 by a specified date. Upon the payment of the £59 to Francis Land or his heirs the original deed transferring the two parcels to the Lands would become void. The net result of these transactions was that the Mahoes had effectively mortgaged their property to Francis Land.

In 1736, Francis Land died. According to Land's estate papers, Samuel Mahoe still owed him the sum of £59, plus interest, as agreed to in the deed of defeasance. In his will, which was probated December 8, 1736, Francis Land did not mention the money Samuel Mahoe owed him, or the parcels of land near Augustine Creek (NCC Probate File RG 2545, Francis Land - 1736). In 1749, Samuel Mahoe died. He left no will, and no instructions for how his wife was to pay off his debts. In the 1700s widows usually remarried quickly, especially those with farms to run, but Henrietta carried on by herself for more than five years. She seems to have kept up the weaving business, since on July 19, 1749, she took 14-year-old John Harding on as an apprentice for seven years. (NCC Orphans' Court Vol. C:114). Henrietta was not able to pay off the mortgage, however, and in 1751 she petitioned the Orphans' Court to let her sell off some of her property. The involvement of the Orphans' Court in these transactions must mean that Samuel's heirs were under age, but because of gaps in the record it is not known who those heirs were.

The first sale did not actually take place until August 19, 1755, when Garret Peckard of St. Georges Hundred bought all of the Mahoe lands for £305. For some reason, however, this sale seems not to have gone through. Perhaps Peckard was not actually able to come up with the money. Perhaps Henrietta's remarriage the next month, to Thomas Wallace, allowed her to pay off Peckard and hold onto the land. We have been unable to learn anything about Thomas Wallace, but it does seem that he and Henrietta continued to live at Augustine Creek. Whatever happened, we find Henrietta, and Thomas Wallace, who styled himself "Yeoman of St. Georges Hundred," selling the same lands again in 1756 to Thomas McKean, future governor of Pennsylvania

and signer of the Declaration of Independence. Shortly thereafter McKean sold the land back to Henrietta and Thomas Wallace. These transactions probably represented another mortgage, allowing Henrietta to hold onto her home for a few years longer.

However, in 1758, John Land, son of Francis and holder of the first mortgage on the Mahoe/Wallace farm, brought suit against Thomas and Henrietta in the Court of Common Pleas. The Wallaces could not pay, and in August 1759, the sheriff sold the farm at auction to yeoman James Piper, for £106.14, bringing to an end the long, sad struggle of Samuel and Henrietta Mahoe to gain outright ownership of their land (NCC Deed Book T-1:211). Piper, the new owner of the farm at Augustine Creek, certainly did not live there, and there is no evidence that he leased the house to a tenant. The house and the other buildings were torn down or moved and the land returned to the plow.

3. The Project

Because these two small farms were so close together, it seemed natural to combine the excavation of the Augustine Creek North and South sites into a single project. We therefore conceived a plan to study the two sites as part of a larger research project on ordinary life in eighteenth-century Delaware. This project included the two excavations as well as an extensive program of documentary research, organized under the theme of "The Ordinary and the Poor in Eighteenth-Century Delaware." The archaeological fieldwork on both sites was done in March and April 1997. Documentary research and the washing, sorting, and cataloging of the artifacts were not finished for nearly a year, and some of the specialized scientific analyses took even longer. This report describes the results of this work.

It is conventional for archaeologists to organize their site reports into separate sections on fieldwork, documentary research, artifact analysis, specialized analyses, and conclusions, but in this report we have taken a different approach. We have organized it by the main questions about the past we were investigating—material culture, housing, diet, and the layout of farms—and in each section we have described archaeological fieldwork, documentary research, analysis, and conclusions together. During the excavation of the Augustine Creek South Site we found several features that looked like they might be pits dug by prehistoric Native Americans, and we discuss our findings about these pits, and the prehistoric inhabitants of the site, in a separate section.

D. WHO WAS ORDINARY? WHO WAS POOR?

1. The Tax Rolls

We began our research thinking that the tenants at the Augustine Creek North Site were poor, whereas the Mahoes were a family of ordinary means. These ideas were based on the size and locations of the sites and our early research on the Mahoe family. These labels raise many questions about the society of eighteenth-century Delaware. In particular, we might wish to know what these labels imply about the lives of ordinary and poor people, and how many people belonged to each category. Answering the first question is the goal of this report. But before we begin trying to answer it, we can say something about the overall distribution of wealth in the society. Our source for this information is the surviving tax rolls. Taxes were based in part on the wealth of the household, so the amounts of the assessment tell us, in a rough way, how rich each household was. Only a few Delaware tax rolls from before 1797 still survive. The surviving eighteenth-century lists are very brief documents, simply giving the names of the taxpayers and the amount of income on which the taxpayer was assessed. The assessments were made by hundred, which are divisions of Delaware counties roughly equivalent to the townships of Pennsylvania and New England. The Augustine Creek sites were located in St. Georges Hundred.

Samuel Mahoe, owner of the Augustine Creek South Site, appears in one of the surviving rolls for St. Georges

Hundred in the year 1751. (Since Mahoe had died in 1749, his widow was actually responsible for the debt, but the assessment was probably made while he was alive.) The list includes 214 names, each one a head of household. The only other information given is a number that was supposed to represent the taxpayer's annual income (Main 1965). The county governments of eighteenth-century Delaware, of course, had no means of accurately determining what peoples' incomes were, so we should probably take these numbers as a rough estimate of the taxpayer's wealth and social position rather than as a real annual income. There was also a poll tax that had to be paid by each head of household, on the principle that everyone ought to contribute something. The currency is not specified, but it was probably Pennsylvania pounds. The American colonies used a variety of currencies, some of which rose and fell in value over time, so that determining the value of any currency in pounds sterling (the main British currency) requires specialized knowledge, and comparing prices over time in these unstable currencies requires quite sophisticated mathematics. For a glimpse of the complications involved the reader might take a look at the many pages of tables in McCusker and Menard's *Economy of British America, 1607-1789* (1985). At any rate, we can certainly compare the numbers in this tax roll with one another, even if we cannot safely compare them with anything else. The number varies from a low of 8 to a high of 60. For this case, the poll tax seems to have been 8 pounds, and the amounts over this were assessed on property or on above-average incomes.

As Figure 6 shows, 65 of the 214 heads of household were assessed only for the poll tax. These people probably owned little property. Ten households were assessed for 10 pounds, and 62 for 12 pounds. Samuel Mahoe, who owned a farm and 122 acres of land, was assessed for 14 pounds. Since the average (mean) value of the assessment was 13.95 pounds, and the median value was 12 pounds, he was right in the middle of his neighbors in wealth. Only five households in the hundred were assessed for more than 30 pounds, so there were few families in the hundred who were strikingly richer than the others. Figures for Christiana Hundred, a little farther north, show a very similar distribution (Coleman et al. 1984).

Quite a number of tax rolls from after 1797 survive, and they are much more detailed than earlier rolls. The tax laws had been changed to focus on property rather than income, and most of the post-1797 rolls include valuations for land, livestock, slaves, and silver plate, as well as a personal tax. In 1797, the personal tax was either $133, $200, or $267, depending on the income of the household. For St. Georges Hundred, the 1797 return includes listings for 516 persons who lived or owned property in the hundred. Of these, 156 paid no personal tax, so they must have lived outside the hundred. These absentee landowners were an important factor in the local economy, since they owned more than a third of the land, including the six largest farms. Subtracting the absentee owners, the tax rolls list 360 households.

Of these, 96 owned no taxable property. A further 131 households owned some property but no real estate; 133 households, or just over a third of those taxed, owned land. A total of 109 households owned slaves. Table 1 shows the community divided into 10 deciles, that is, groups representing 10 percent of the households, showing the distribution of wealth among them.

In order to translate these numbers into a picture of the society, we need to observe a few points about tax rolls. The first point is that cheating the tax man is a pastime as old as taxation, so we should not put too much faith in any one number. Also, the tax rolls tell us only about households, not individuals. Many of the poorest people in this society lived in wealthy households, either as slaves or as servants. The 1797 tax roll counted 547 slaves in the hundred, and other sources suggest that there may have been hundreds of white servants as well. In Delaware there seem to have been few plantations set up like those in the south, with gangs of slaves living in separate quarters. Most Delaware slave owners had four or fewer slaves, and the slaves lived close to their masters, sometimes in the same house and sometimes in a separate kitchen building. When archaeologists find artifacts in the ground, they feel lucky if they can figure out which household the items came from; they can almost never determine what individual person owned or used them. Therefore, from the archaeological perspective, farmers, servants, and slaves usually blend into an indivisible household group, just as they do in the tax rolls.

We should also remember that the tax rolls do not tell us much about the households that paid these amounts; in particular, they do not tell us how old the heads of the households were. The age of taxpayers is vitally important, because we know from many sources that the wealth of most families varied greatly over their life cycle (Ulrich 1988). Many people who did not own property when they were young acquired it before they died. In the agricultural societies of Europe and colonial America a family's wealth typically peaked when the parents were in their forties and fifties, when they had teenage children to help around the house and farm. (Unlike modern parents, those of the eighteenth century found teenagers to be a great economic blessing.) But when those children married and moved away, and the parents found themselves able to do less and less work themselves, the household's income tended to decrease again. Therefore, just knowing that 25 to 30 percent of households (65 out of 214; 96 out of 360) owned no property should not conjure up for us an image of a highly unequal society in which a third of the people never owned much of anything. Many of these people were probably young, in which case, barring death or serious illness, they could expect to own property eventually. The tax rolls themselves do not tell us which of the poor were only temporarily without property and which could never expect to own any.

2. The Society of St. Georges Hundred

The tax rolls show a society in which wealth was unequally divided. Even if we ignore slaves, servants, and others who were not included in the tax lists, we still see that the richest households controlled most of the wealth in this hundred. In 1797 the richest tenth (decile) controlled 55 percent of the total wealth and 69 percent of the farmland (Plate 5). If we include absentee owners, the picture is still more uneven, with the top six landowners owning 8,009 acres of land, more than 35 percent of the farmland in the hundred. The largest landowner was Robert Haughy, a Philadelphia resident, who styled himself "Esquire" and was taxed on 3,039 acres of land, 13 houses, and numerous farm buildings (the assessors did not bother to count them). Cantwell Jones sometimes lived in Cantwell's Bridge (now Odessa), a town named after his father, but in 1797 he was residing elsewhere; he owned 1,345 acres of land, five houses, four barns, and 17 slaves. William Frazier, the hundred's wealthiest resident, owned 612 acres of land, three houses, and a "negro quarter" for his 11 slaves.

However, compared to contemporary Europe and Latin America, or to the plantation country of coastal South Carolina, the society of eighteenth-century Delaware stands out not for its inequality but for its comparative fairness. More than two-thirds of the taxpayers (70%) paid more than the minimum tax in 1751, and on the more detailed 1797 list more than three-fourths owned taxable property (79%). How can we describe the economic situation of the people listed in the 1797 tax roll? At the top were 20 or so great proprietors, who owned large estates which they leased out to tenants or had run for them by professional overseers. These were the gentlemen who did not have to get their hands dirty. Beneath them were a large group of property-owning farmers with between 50 and 350 acres of land. These families were the economic and political center of the society, the independent yeomen on whom Thomas Jefferson wanted to base his republic. There were about 50 such households in the hundred, or about 15 percent of the total. This category ranges from men like Jacob Canon, who owned 72 acres of land and a house, to William Carpenter, who owned 326 acres of land, a brick house, six other farm buildings, two adult slaves, two slave children, and nine pounds of silver plate. These families farmed all of the land they owned. Most of them could afford slave or hired help, but they could not afford to lease out their lands or move to the city and hand over the management to others.

Next on the social ladder came a large group of tenant farmers. In 1797, 125 households owned livestock but no land. This group spans a considerable economic range, from people with a few chickens or a pig in their yards to substantial farmers. Several tenants owned livestock, slaves, and silver plate sufficient to place them in the richest 20 percent of their society. One of them, James Hendry, owned livestock worth $822, the highest value in the list, as well as five slaves. Although the ownership of land was highly valued in this farming society, these wealthier tenants seem in our records to have been quite similar to the average property owner, and their daily lives would not have been much different. We can probably place 50 households from

the 1797 tax list in this substantial tenant category, so this group was roughly the same size as that of the middling property owners. Together, these two groups made up about a third of the households.

Below the substantial tenants came a large group of households that owned some property, either a few animals or one or two slaves. Some of these people were probably small-time tenant farmers, but others may have been craftsmen, such as blacksmiths or carpenters. Eighteenth-century America suffered from a great shortage of skilled labor, and men with marketable skills could earn a good living without owning any land (Main 1965:75-83). St. Georges Hundred included two small towns, St. Georges and Cantwell's Bridge, and these communities were home to small concentrations of artisans (Figure 7).

We can distinguish among those with no taxable wealth based on their personal tax, which was supposed to be assessed according to income. Five households with no wealth were assessed for an income of $267, and 48 for $200. These were probably the households of agricultural laborers, sailors, or other semiskilled workers. Some of them, however, may have been young people just starting out who had decent incomes but had not had a chance to accumulate many possessions. At the bottom of the heap were 43 households assessed for the minimum income of $133.

It is important to emphasize, again, that the tax rolls give us a static picture of a society that was in fact changing very rapidly. Some people climbed quickly up the economic ladder. William Strickland of Kent County was a landless tenant in 1726, taxed in the bottom half of the people in his hundred, but by 1757 he owned 223 acres of land and had risen to the top 10 percent (Catts et al. 1995). Although we do not know how many Delaware residents were able to rise as far as Strickland did, we have a general impression that eighteenth-century North America was quite fluid, with opportunities for many of its white citizens to rise far through their own labors.

Where do the two sites on Augustine Creek fit into this picture? The Mahoes were property owners with more than 100 acres of land, which places them firmly in the yeoman group. However, they had continual financial troubles, and they were assessed in 1751 for the average amount, so their income was not high. We should probably place them near the bottom of the property-owning farmer class.

The tenants on the north side cannot, of course, be placed as precisely. Because of the small size of their tenement, and its poor location, they probably were not well-off tenants of the kind who owned slaves or large numbers of cows. They were probably in the bottom half of households, although not at the very bottom.

We can get an idea of the economic circumstances of landless laborers in rural Delaware from studies that have been conducted in neighboring Chester County, Pennsylvania (Clemens and Simler 1988). The account books of property-owning farmers often describe the arrangements they made with their tenants and laborers, and some farmers made careful records of all the money they paid out for hired help. Farmers commonly offered workers the use of a small house or part of a house on their land at a notional rent that would be paid for in labor. A garden plot, the right to keep a few livestock or collect firewood, and the use of a few apple trees might also have been included; since the Augustine Creek North Site was on the lot with the orchard, perhaps its residents were allowed to collect fruit for their own use. If the cottager (as these tenants are called) did more work than was called for in the lease, he would be paid in cash, but if he did less he would end up owing his landlord the difference. It seems likely that the house at Augustine Creek North was a cottage that was leased in this way, and that the residents were in this laborer or cottager class.

A good example of these arrangements is the agreement made in 1769 between farmer Samuel Swayne and laborer Daniel Burk. Swayne offered Burk a cottage at an annual rent of 24 shillings 9 pence, to be paid for in work; the traditional pay rate was around 2 shillings a day for most tasks. Burk was allowed sufficient land to plant a garden and a patch of flax, and he could keep a cow and two pigs. He also had access to the farmer's plow and cart, although he would be charged for their use, again at traditional rates. During the

course of that year Burk worked for six days washing flax, one day digging in the apple nursery, one day reaping barley, two and a half days reaping wheat, and half a day cutting hay, and he ended up owing Swayne 1 shilling 8 pence (Clemens and Simler 1988:118).

Another detailed record concerns the work John Rock and his wife (who is not named) did for George Brinton in 1792-1793 (Table 2). The Rocks performed a total of about 170 days of work and earned more than 18 pounds, a fair sum. However, it was unusual for a laborer to end up with more than 4 or 5 pounds of cash income in a year, a sum that would barely feed a family of four or five.
Daniel Burk lived in Samuel Swayne's cottage for only two years, and study of these and other records shows that laborers in Pennsylvania moved frequently. A site like Augustine Creek North, therefore, may have been occupied by many households over its history. Chester County's cottagers included both blacks and whites, as most likely did New Castle County's. In the Colonial period many cottagers eventually came to own their own land, but this possibility slowly faded at the Revolution because of rising land prices and the increasing population.

E. BEFORE THE EUROPEANS

Although the excavations at the Augustine Creek North and South sites focused on the farms that stood on the sites in the eighteenth century, both sites were also used by Native Americans long before Europeans arrived in Delaware. On both banks we found the flakes left by people who made stone tools and the cracked rocks that represent their fires. The only datable artifacts found during the early stages of the archaeological work were a few small potsherds and spearpoints that had been made during the Woodland I period (3000 BC to AD 1000). During this time the Native Americans of Delaware were hunter-gathers who traveled widely across the landscape in search of food and other resources (Custer 1989, 1994). Their larger settlements were mostly on tidal estuaries and other large wetlands, where resources were most concentrated, but they also visited inland areas to hunt and collect plants, as well as in passing from one large seasonal camp to another. Indians therefore camped in likely spots all across the state. In particular, they preferred to camp on level, high ground near rivers and streams. It was no surprise, therefore, that Indian artifacts were found on both banks of Augustine Creek. Since we found several different kinds of artifacts—fire-cracked rock, flakes, tools, and pottery—we think that the visitors were camping, rather than just passing through while hunting.

However, it is usually difficult to learn much about ancient Indians from these small camp sites except that they were there. Plowing mixes together the artifacts they left behind, and, since these artifacts may have been deposited during hundreds of visits over thousands of years, it is difficult to say which artifacts go with which others, who left them, how many people were there, or what the visitors were doing.

The presence of a pit feature containing Indian artifacts on the north side of the creek added another element, because such pits sometimes contain collections of artifacts that were all used by one group of people. Sometimes they also contain charred seeds or bones, charcoal that can be dated by the radiocarbon (C-14) technique, and other important remains. Certain pits are also the subject of a major debate among archaeologists about whether they are the remains of houses. Therefore, the pit at Augustine Creek North was considered a significant feature worthy of excavation, and when other pits were found at the Augustine Creek South Site they were also excavated. The ancient pit features at Augustine Creek South are a reminder of the contingency and serendipity that is part of even the best-planned excavation: you never know exactly what you are going to find when you dig, and you have to be prepared to deal with whatever turns up.

II. FARMS

A. FARMS, LANDSCAPE, AND CULTURE

The European settlers who came to America did not see the new landscape as a paradise in need of preservation, but as a wilderness that needed to be tamed. They cut down trees, cleared fields, planted orchards, laid out roads and towns, drained swamps, built fences and farms, and ornamented their homes with gardens. They worked with what nature gave them, of course, but the changes they imposed on the land were profound. By the middle of the eighteenth century, the people of Delaware lived in an environment that was largely of their own creation. They not only slept in houses they had built, but also traveled on roads they had made, and worked in yards and fields they had cleared and planted, often with crops from Europe. They herded imported animals, some of which, especially pigs and pigeons, were soon displacing native animals in the remaining wild lands. Eventually, even the weeds they hoed out of their gardens were mostly imports (Cronon 1984).

The European settlement of North America was not just the European world imposed on the American. The transfer of the old ways to the new world was complicated by the reality of America, and by changes taking place in Europe at the same time. Adaptations had to be made to the local environment, and new crops, especially corn, had to be incorporated into farming routines. Other changes were made to take advantage of resources that were more abundant in America, especially wood and land. With so much land available, farmers could spread out their fields and did not have to work small plots intensively. Good wood for building was so expensive in much of Europe that rich Europeans left the beams on their houses exposed to show that they could afford large ones, creating the look we call "half-timbered." But in America there were too many trees, not too few, and the settlers could build in ways that would have been thought wasteful in most of Europe. The log cabin of the American frontier could only be built in a land where trees were to be had for the taking.

Settlement in America also coincided with major changes in the ways Europeans were approaching the landscape of their homes, so that the European models to which the settlers looked were changing even as the settlers tried to copy them. The European ways the settlers had brought with them in the early 1600s were out of date in much of Europe by 1700, and some Americans tried to keep up with these changes. Influenced by Renaissance classicism, many Europeans began to see their lives as disorderly and unclean, lacking sufficient attention to beauty and separation between public and private activities. They began to redesign their homes with separate rooms for cooking, eating, sleeping, and entertaining, so that work and leisure could be kept apart. Farm layouts were also changed, so that unsightly activities were banished to the back yard and the front yard was remade into a formal court for welcoming and entertaining guests. In Britain and America these new precepts are usually referred to as "Georgian," after the three Kings George who reigned in Britain during the eighteenth century. According to the new rules, visitors should not have to walk through dung, or kick chickens out of the way, to reach the front door. The farms we see in Delaware today, with the farm buildings all arranged behind the house and a neat front yard planted with bushes and flowers, are a reflection of the new ideas about home life and work that began to spread in the eighteenth century.

The wealthiest American families took these ideas to great lengths. They not only cleaned up their front yards, but stage-managed the approaches to their houses to impress visitors with their status. They arranged their houses to separate work and its grime from their neat domestic lives, sometimes banishing farm animals and field hands to distant "quarters." Some builders even reshaped the landscapes of their farms according to strict geometric rules derived from Greek and Roman writers, laying out lanes that ran perfectly straight for miles and gardens that were mathematical playgrounds in which each ratio had some arcane significance (Leone and Shackel 1990). In America, homes like Mount Vernon and Monticello embodied these new values.

Although these Renaissance values originated among the wealthy, their spokesmen thought they were appropriate for ordinary people as well. The clearing of the land was seen by some of these writers not just as an economic necessity, but as an assertion of values (Adams 1990; Herman 1994; Kelso and Most 1990). Here the reality of building farms in the wilderness got mixed up with the new ideas about imposing order on life. Civilization was equated not only with clearing the land, but with clearing it in the right way. Treeless fields, straight fences, and a well-ordered farmyard were signs of an orderly, civilized way of life, while half-cleared, stump-ridden fields, tumble-down fences, and ramshackle barns were signs of ignorance and sloth. To the settlers, therefore, this new landscape they had made was as rich in symbolism as their buildings or their clothes. One had only to look at how a farm was laid out and maintained to determine whether its proprietor was educated in the new aesthetics.

Although we know a great deal about elite houses and the ideas of social critics, we know much less about how average people actually lived. One reason for excavating the farms of ordinary people is to help us understand whether the values embodied in the landscapes of Mt. Vernon or Monticello were widely accepted by the general population. Ordinary people did not write much about such matters, but they did make many things, including their farms (Isaac 1982). Their farms are therefore an important key to understanding how ordinary people thought, and how closely in touch they were with the currents of eighteenth-century philosophy (Deetz 1977; Glassie 1972; Long 1972). Did many ordinary people, for example, clean up their front yards and put their animals and manure piles behind the house? Or did they continue to organize their lives and farms in traditional ways? And to what extent were these European traditions modified by their transference to the New World?

B. ARCHAEOLOGY AT AUGUSTINE CREEK SOUTH

1. Fieldwork

The Augustine Creek South Site had been plowed many times. When archaeologists dig up a plowed farm site they acquire two kinds of information about the farm's layout. The first step in such an excavation is usually to dig and screen some of the plowzone soils to recover a sample of the artifacts these soils contain. The distribution of these artifacts can sometimes tell us where different activities took place on the farm, and the distribution of architectural artifacts, such as brick pieces, can sometimes help identify the locations of buildings. After a sample of the plowzone has been dug by hand, heavy equipment is usually brought in to remove the rest, exposing the ancient subsoil across the entire site. At that depth, any building foundations, postholes, wells, pits, or other "features" dug into the subsoil will be visible, and they can be mapped, providing direct information about the size and layout of buildings.

At the Augustine Creek South Site, only a small (one percent) sample of the plowzone soils was excavated by hand before the remainder was stripped from the site with a backhoe (Figure 8). This small sample was intended more to guide the stripping of the site than to generate an artifact sample. Earlier testing on the site had shown that rather few historic artifacts were present in the plowzone. Of the artifacts that were found, two-thirds were brick fragments, and a majority of the remainder were small sherds of coarse red earthenware, or redware. Work on other historic archaeological sites has shown that plowzone finds can be used to analyze the layout of a farm only if sufficient numbers of artifacts, and a sufficient diversity of artifact types, are recovered (Gibb and King 1991). The plowzone at the Augustine Creek South Site did not meet these conditions, so time spent digging a large amount of the plowzone would probably have been wasted. In addition to the one percent sample, 1x1-meter test units were excavated on each side of the known buildings, to find out if trash was being disposed of in any of the yards near the buildings. Two additional units were also planned on either side of Test Unit 8. This test unit was unusual in that it was the only one in which redware did not outnumber all other artifacts. The area sampled measured about 50 by 70 meters, or just under an acre.

The plowzone sampling plan was modified again after Feature 11, a sheet midden or shallow trash deposit, was discovered in Test Unit 30. Test Unit 30 had been excavated in the extreme southeastern corner of the planned testing. The midden was shallow and the soil above it had to be removed carefully. We wanted to know how big the feature was so as to guide our machine work; we also wanted to see if the plowzone over the midden had a distinctive artifact pattern. Test Unit 36 was excavated 5 meters south of Test Unit 30, and Test Unit 50 was dug 5 meters northwest of Test Unit 30. The midden was not encountered in either of these units.

We began the stripping using a backhoe with a 4-foot-wide smooth bucket and rubber tires. But that March was very wet, and no part of the stripping went as planned (Plate 6). We intended to use a dump truck to carry excavated soil off the site, but the soil was so soft that this proved impossible. A dump truck was used for only one day, the driest day in March, but even on that day it left deep ruts. Without a dump truck, all of the soil had to be moved several times using the backhoe, which was time-consuming and made the stripping process very slow. On some days it was so wet that even the backhoe got stuck. In the end, a large trackhoe was brought in to complete the stripping. We also had to strip more area than we had planned. Feature 11, the sheet midden, was found directly adjacent to the silt fence surrounding the site on the east side, which had been placed at the boundary of the proposed stripping. After consultation with representatives of DelDOT, it was agreed to pursue the stripping farther to the east. The silt fence therefore had to be moved, along with a very large dirt pile, and the stripping was carried up to the project boundary. However, after this phase of stripping had been completed, it was discovered that several features were present within a few feet of the edge of the stripping, and that Structure B, a post building, extended beyond the right-of-way onto the adjacent parcel. After permission was obtained, the stripping was extended onto that parcel, which meant moving the silt fence again. Instead of the planned five days, stripping of the site actually took more than two weeks to complete (Plate 7). In all, an area of
about 3,000 square meters (0.75 acre) was uncovered.

After the completion of the stripping, a site plan was prepared depicting all the features on the site. A transit and tapes were used to cover the site with a grid of nails at 5-meter intervals; the features were then mapped using triangulation, that is, by measuring the distance from each new point to two known locations. All the features are shown in Figure 9.

The main historic features were a cellar hole measuring about 16 by 25 feet, designated Feature 1, two post buildings designated Structures A and B, a series of fences and other post patterns, several pits, and the sheet midden (Feature 11). The cellar hole is described in the next chapter, on housing.

2. Outbuildings

a. Structure A, Possible Kitchen

Structure A was a group of six large postholes located immediately west of Feature 1 (see Figure 9; Figure 10 and Plate 8). These posts were the remains of a post-in-the-ground or earthfast building that measured 17 by 19 feet. Such buildings were framed around large posts set in holes in the ground, like modern pole barns. This technique was very common in the British colonies in the seventeenth and early eighteenth centuries, especially in the Chesapeake region (Carson et al. 1981; Kelso 1984). However, the posts began to rot within a few years of being put in the ground, so the technique became less common as life in the colonies grew less primitive. In the Delaware Valley, post-in-the-ground architecture also had to compete with another tradition of constructing cheap wooden buildings, the log architecture brought over from Sweden and Germany. By 1800 post-in-the-ground architecture had largely disappeared from the region, only to be revived by the invention of creosote and other wood preservatives in this century.

Because post-in-the-ground buildings did not usually last very long above ground, this kind of architecture is sometimes called "impermanent" by historians. For archaeologists, however, these buildings are quite permanent indeed. Where buildings were erected on shallow brick or stone foundations, or on brick piers, plowing has often destroyed all evidence of the foundations, leaving nothing for archaeologists to find. However, the large postholes dug to hold the structural posts of an earthfast building were usually deep enough to survive plowing, so clear evidence of these buildings almost always survives. The remains of Structure A consisted of six large postholes in two lines 17 feet apart. The distance between the eastern pair of posts and the central pair was 12 feet, while the distance from the central pair to the western pair was 7 feet. The soil in the postholes did not contain any historic artifacts, suggesting that the building was erected not long after the farm was established. However, some Indian artifacts were included in the postholes; these potsherds and flakes of stone must have been in the topsoil when the Mahoes arrived at the site, and they were accidentally mixed into the fill of these postholes. The stains left by the posts themselves, which archaeologists call the post molds, were square and about 12 inches on a side.

A concentration of brick in the plowzone near the western end of Structure A suggests that this building may have had a chimney. However, no trace of chimney foundations was found. If the structure did have a chimney, it was probably a kitchen. If it did not, it may have been a barn. Since Samuel Mahoe was a weaver, we should note that there are written records (probate inventories) describing looms placed in kitchen buildings, so it is possible that Mahoe did his weaving in this structure.

b. Structure B, Possible Weaving or Dyeing Shed

Structure B was a six-post earthfast building located at the eastern end of the site. Five posts from the building were in the site as initially uncovered; the sixth post was outside the project area and was uncovered only during the additional stripping near the end of the project. The building measured 14 feet 5 inches by 24 feet. Structure B was not aligned with Feature 1 or with Structure A. The postholes contained small quantities of ash and some artifacts, indicating that this structure was not one of the first built on the site. The post molds were square and measured 7 to 10 inches.

Structure B, along with the surrounding, ash-filled pits, was part of the separate work area at the eastern end of the site. Since it is known that Samuel Mahoe was a weaver, the building has been tentatively identified as a shed where weaving and other tasks involved in the processing of cloth were performed. Feature 15, one of the ash-filled pits, was located directly adjacent to Structure B on the southwest side, and Feature 18, another of these pits, was adjacent to the northwestern end of the building. Feature 18, located at the western end of the building, may have been the base for a brick or stone chimney that was completely "robbed away," that is,

salvaged for use somewhere else.

c. Structure C

Structure C was a peculiar collection of four postholes that formed a small, irregular rhombus (Plate 9). The rhombus measured 3 to 3.3 feet on a side. The postholes were rather large, measuring up to 1.5 by 2 feet. The depths ranged from 3 to 5 inches. However, the subsoil in this part of the site was almost pure gravel, so it is possible that the holes had lost a great deal to erosion. No artifacts were recovered from the postholes. The most likely explanation for this agglomeration is that it represents a small shed that was attached to a larger building. However, the postholes are large for such a small structure. This kind of minor mystery is quite common on archaeological sites, and sometimes the things we do not fully understand outnumber the things we do.

3. Other Features

a. Feature 11, Sheet Midden

Feature 11 was a shallow pit, with a compact but irregular shape, measuring about 14 feet north to south and 18 feet east to west. The feature was discovered in Test Unit 30, which was in the far southeastern corner of the proposed Phase III excavations, 70 feet from the house. Large sherds of coarse red earthenware were visible on the surface of the feature after it had been exposed. The feature was 10 inches deep at the deepest part and contained two types of soil. The top soil, Stratum A, consisted of brown silty loam similar in color and texture to the plowzone, but slightly darker and siltier. The lower soil, Stratum B, resembled a mixture of Stratum A and the subsoil. The thickness of the two strata varied, although Stratum A was generally thicker, and the boundary between the two was highly irregular. Both strata contained artifacts and animal bones, although there were many more in Stratum A. The feature appeared to be a shallow, natural depression where trash had accumulated during the occupation. The presence of such shallow trash pits around colonial house sites invites one to imagine the sights and smells of the farmstead 250 years ago, when the bones were fresh and the broken pots were mixed with rotting carrot tops and other kitchen refuse.

A total of 985 historic artifacts were found in Feature 11. The objects recovered included several large sherds from a large redware crock or jar, numerous smaller sherds of redware, trailed slipware, and white salt-glazed stoneware, pieces of wine bottle glass, and badly rusted nails. One sherd of ironstone was found on top of the feature. Other than the single redware jar, the objects recovered were generally not large and no other mendable vessels were noted. Most of the material had probably been thrown away someplace else and then moved to Feature 11; archaeologists refer to objects that have been moved after having been discarded as *redeposited* material. Numerous bones were also recovered, including six pig jaws. The bones, however, were in very poor condition, and though an attempt was made to excavate and pack them carefully, they did not survive the process well. The range of artifact types was very similar to what was found in Feature 1 and the plowzone, and quite different from that recovered from the ashy pits nearby (see below). Stratum B contained several scattered pieces of brick and broken stone, probably from a building somewhere else on the site.

b. Feature 2, Shallow Pit

Feature 2 was a shallow pit uncovered in one of the backhoe trenches dug during the evaluation of the site. The feature was very roughly round, about 5 feet in diameter. Excavation showed that the pit had an irregular floor and was about 5 inches deep (Figure 11). The fill in the pit was dark brown loam with many brick fragments, some as large as half a brick. Very few other artifacts were found. Such shallow pits are common on historic farm sites, and their origin can usually only be guessed at. Since plowing had removed the upper 8

to 10 inches of the pit, it was once substantially deeper, but still shallow enough to have been created accidentally by the extraction of a wagon stuck in deep mud, wallowing pigs, or some other everyday event.

c. Feature 15, Oval Pit

Feature 15 was a regular oval pit located 70 feet east of the main house, directly in front of Structure B. The pit measured 8 by 5 feet, and was 13 inches deep (Figure 12; Plate 10). The sides sloped very steeply and the bottom was nearly flat. The bottom showed no evidence of burning. The pit was very regular and must have been dug for some purpose. Various parts of the manufacturing process for both linen and woolen cloth require immersion in water, including retting the flax (soaking it to loosen the fibers) and boiling the wool, so it is possible that this pit was a cistern (water tank) used in cloth manufacture. The floor was a heavy clay loam that would have held water fairly well.

The pit contained two kinds of soil. The top layer, designated Stratum A, was mixed yellowish brown clay loam, dark brown silty loam, and black ash. Beneath Stratum A was Stratum B, a very dark grayish brown silty loam mixed with some black ash, and beneath Stratum B was more soil identical to Stratum A. All the soil appeared to have been intentionally placed in the pit (rather than having washed in). The artifacts resembled those from the other ashy pits (discussed below), but were quite different from those found in the sheet midden and the cellar.

d. Features 18, 19, 22, and 42, Shallow, Ashy Pits

When we stripped the plowzone from the eastern part of the site, what was most prominent were several large black stains. These stains proved, on investigation, to be shallow pits containing primarily black ash, pale brown silt, and yellowish brown clay loam. The deepest of these pits, Feature 18, was only 7 inches in depth at its deepest point. Several postholes in this part of the site had similar ashy fill mixed in them, suggesting that they had been dug through similar deposits and therefore that the surviving pits were remnants of larger deposits that had been destroyed by plowing. The artifacts from these pits, and from Feature 15, conformed to a distinctive pattern. On most of the site the most common historic artifact was coarse red earthenware, and other ceramics, such as white salt-glazed stoneware, were also common. In these pits, however, most of what we found were tobacco pipe fragments, including two nearly complete bowls from Feature 19, and bone, with very little brick or ceramic. The material from Feature 15 was dominated by 19 pipestem and pipe bowl fragments and 29 small pieces of rusted iron; two bone buttons were also recovered, but we found only five small sherds of redware and no other ceramics. The ash deposits and the pipe fragments create an image of men smoking their pipes while they tended fires. Since Samuel Mahoe was a weaver, the fires may have been for the purpose of boiling wool, dyeing cloth, making potash or soap, or for some other part of the cloth manufacturing process.

Because we were curious about where all this ashy fill came from, we took many samples for laboratory study. Six liters of this soil were processed by a technique called flotation. In flotation, the soil is placed in swirling water, and everything that floats is captured in a fine screen. We had hoped that we might find seeds from European dye plants, such as mullein or woad, or perhaps even native North American plants, such as pokeberry, walnut, or blood root, that had been used for dyeing by Indians. Unfortunately, we found only charcoal. But when we subjected some of the samples to chemical analysis, we got very interesting results, which are summarized in Table 3.

The differences between the ashy fill and the rest of the site are quite striking, particularly in pH, calcium, phosphorus, and strontium. (The absence of iron is caused by the pH, which distorts the test results.) The pH, a measure of how acidic or basic the soil is, is quite high. Most of the soil in eastern North America, like that of the site as a whole, is acidic, but the ashy fill is basic. Wood ash, which was used to make lye, is a base,

and the ashes account for part of the high pH. The very high calcium and strontium counts show that the soil contains a great deal of lime, another base. The lime almost certainly came from oyster shells. Since there were no visible oyster shells in the ashy soil, the shells must have been burned down to produce lime. The phosphorus could have come from any organic material.

The striking chemistry of the soil in these pits show us very clearly that the eighteenth-century residents were performing some form of chemical processing. By 1750 professional cloth manufacture was a complex process, involving the use of several chemicals. Lye (NaOH), lime ($CaC0_3$), potash (K_2C0_3), soap, coal tar, and urine were all used to process cloth (Bemiss 1815; Bronson and Bronson 1817). Dyeing cloth could involve potash, vinegar, sulfur, slaked lime ($Ca(OH)_2$), cinnabar (HgS), blue vitriol ($CuSO4{\cdot}5H_2O$), various strong and weak acids, and other chemicals. A serious cloth manufacturer therefore had to be something of a chemist as well as a weaver. While we cannot now say exactly what processes generated the chemistry of these pits, especially since several may have been involved, we can certainly see the evidence, 250 years later, of Samuel Mahoe's workshop.

e. Feature 31, Shallow, Rectangular Pit

Feature 31 was a rectangular pit located at the southeast end of Structure B. This feature was located beyond the limits of the wetland area and was not exposed until near the end of the project. The pit measured 6 by 4 feet. The pit did not align with Structure B. A wine bottle base and a pipestem could be seen on the surface of the pit. The fill was gray loam with some ash. The feature proved to be very shallow, just 1 to 2 inches deep. Only one additional artifact was recovered during the excavation, a small piece of clear glass. Because of its highly regular shape, it is clear that the pit must was dug for some purpose, possibly to serve as the base for some piece of wooden equipment. The fill in the feature resembled, but was not identical to, the ashy fill in Features 15 and 18 nearby.

f. Fences

Evidence of several fences was found at the farm (see Figure 9). The clearest was a line of five postholes at 10-foot intervals in the northwest corner of the site, which were designated Fence A. These holes were square and had obviously been dug with a shovel (posthole diggers were introduced around 1850). The tested holes contained no artifacts, so they may date to the eighteenth century. Fence A does not align with any of the farm buildings, however, or with any of the other fences. To the east, the fence simply ends. To the west it appears that it may have connected with Fence B, a line of postholes at irregular intervals that extends at least 130 feet to the south, bounding the site on the west side. However, these two fences meet at an angle of 115 degrees. Turning 90 degrees from Fence A, there is a single posthole, identical to those in Fence A, 10 feet away from the end post; but there is no hole directly beyond that first one. There is a suggestion, in the form of four more holes at irregular intervals along the line, that the fence may once have extended 100 feet farther to the south. These confusing partial fences, and the difficulties with connecting them into any coherent pattern, are normal on colonial farm sites in the region (Bedell et al. 1998; Catts et al. 1995), and they remind us that the Mahoes and their contemporaries did not share our ideas about what yards ought to look like. Archaeology tells us that in the eighteenth century people did not build many long, straight fences with the posts set consistent distances apart and all the corners at 90 degrees. Instead, they ran the fences in whatever direction was convenient, with irregular distances between the posts; after all, if you have a log 12 feet long, why cut all the rails down to 10 feet? Since so many of the fences we found appear to be partial, the builders may also have combined different types of fencing, building part of a line out of worm fences that left no traces below the ground, or relying in some places on a thick mass of bushes to keep cows out. Instead of a detailed fence plan, what we usually get from the postholes on a colonial farm is only a general indication of where the fenced yards might have been.

Besides Fence B, there is a second, parallel fence along the west side of the site, designated Fence C, and several miscellaneous postholes. Some of these holes are square and substantial, like the shovel-dug holes of Fence A, but some are small and roughly triangular, which usually indicates a modern fence with metal posts. Therefore, we do not know how many of these posts date to the eighteenth century. Since there are so many posts in this area, however, it seems safe to assume that the Mahoes' yard was fenced along the west side.

Four posts in the center of the site seem to define a line, designated Fence D, that separated the yard southwest of the house from the cloth-working area to the southeast. Fence E was a strange assortment of five holes defining a zigzagging line just southeast of the house. Its purpose is difficult even to guess at.

4. Layout of the Farm

Excavation of the Mahoe/Wallace farm provided quite a bit of information about how the farm was laid out. First, the arrangement of the buildings was interesting. From looking at the site plan, it is hard to tell which side of the house was the front, since one of the two well-defined outbuildings was placed on each long side. But why should it be possible to tell? The idea that the front of a house ought to be different from the back—that the front is public and decorative, the back private and functional—comes from the Renaissance or Georgian reworking of farms and homes, and was not part of the folk culture of medieval Europe. The Mahoes did not designate one side of their house as the public face and banish all their work activities to the back. It seems most likely that the main door of the house opened to the east, as was common in British folk building, which means that the cloth-manufacturing complex, including the ashy pits, was in the front yard. The distribution of artifacts in the plowzone supplied other clues (Figure 13). On historic farm sites, the highest plowzone artifact densities are usually found in working yards (Bedell and Luccketti 1988; Bedell et al. 1998; Grettler et al. 1995). At the Mahoes' farm the high artifact counts were found south of the cellar and Structure A, suggesting that much domestic work was done there. However visitors approached the Mahoes' house, they had to cross work areas, either the cloth manufacturing area east of the house or the domestic work yard south and west of the house and Structure A (Figure 14). If they came from the southeast they would have passed Feature 11, a shallow ditch or pit containing calf heads and other refuse only 70 feet from the house.

The fences, which run at many different angles and connect in no obvious way, again present an image of disorder. The existing fence patterns do suggest that the yard west and southwest of the house was fenced in, so it probably included the garden and possibly a small orchard. This yard was shaped like a rough trapezoid, not a rectangle, and the southeast yard was even more irregular. The order of the farm was based on the work and living routines of the residents, not on a rectangular grid or some other abstract geometrical paradigm. That the residents did use different parts of the yard for different tasks is shown by the very interesting work area around Structure B. The pits in this area did not contain kitchen trash like the cellar hole and the other pits. Instead, they contained wood ash, pieces of tobacco pipes, bits of metal, and some animal bone. The Mahoes seem to have kept the activity performed around Structure B, which we think was cloth manufacture, mostly separate from their domestic chores.

C. ARCHAEOLOGY AT AUGUSTINE CREEK NORTH

1. Fieldwork

Our plan for the excavations at the Augustine Creek North Site in the spring of 1997 was to dig a five percent sample of the plowzone on the site, an amount that has produced good data on other sites with large plowzone collections (Bedell et al. 1998), and then use a backhoe to strip the remainder of the plowzone away. But things did not go as planned. On our first day in the field we discovered that the boundary of the highway right- of-way had recently been staked, and not in the place marked on our maps. Our maps, it seemed, were

out of date. The boundary had been shifted to the west, leaving most of the archaeological site outside the right-of-way. This kind of development leaves archaeologists torn. On one hand, we know it is better if sites can be preserved; on the other hand, we like to dig sites. In this case, we had already developed a detailed excavation plan and had spent weeks thinking about what we might find on the site, so we were deeply disappointed by what was, in reality, good news: that most of the site would not be destroyed by the highway. The site is still there, under the cornfield, where it has been for nearly 200 years.

While walking back and forth to the site that spring we did make an unexpected discovery within the highway right-of-way. About 100 yards west of the main site we found a scatter of brick on the surface of the newly plowed field. We called this location Area A, or Site 7NC-G-144A, and decided to dig five test units there (Figure 15). We found no historic artifacts other than brick in Area A, although we did find a large, shallow pit feature that contained large pieces of brick and several prehistoric potsherds. Area A seemed to be a brickmaking site. At first we thought that it might be the site where the bricks we had been finding during our earlier work at the tenant farm were made, but after carefully comparing the bricks we saw that those from Area A were distinctly different. They were harder, darker in color, and more regularly shaped. Area A therefore probably dates to some time in the 1800s, after the main part of the Augustine Creek North Site had been abandoned.

For most of the Augustine Creek North Site our only information comes from the testing done during the evaluation of the site in 1996, described in Chapter I. In 1997 we worked only on the part of the site within the highway right-of-way, about 20 percent of the total area. This portion of the site was stripped to search for features associated with the tenant dwelling, but the only historic features found in this area were a series of fence lines (Figure 16). We began by removing the plowzone from an area measuring approximately 30 by 140 feet immediately adjacent to the corridor boundary. The only artifacts noted during the backhoe stripping were a few small brick bits. No other historic or prehistoric artifacts were observed in the plowzone or on the surface of the features. The dirt piles left by the backhoe, as well as the backfilled area, were inspected after heavy rains (which wash the artifacts clean and make them more visible), and no artifacts were noted.

No features were observed in the southern 65 feet of this cleared area, but quite a few were seen in the northern section. Among them were about 20 historic posts, including at least one fence line, a small, ashy pit, and an oval feature that could have been either a prehistoric pit or a natural disturbance. The northern section of the cleared area was therefore widened toward the west, into the project corridor. In this cleared area more historic posts and a second oval prehistoric/natural feature were uncovered. We therefore decided to return for a second day of backhoe stripping. Before extending the cleared area to the west, the 10 feet immediately adjacent to the right-of-way boundary was backfilled. We thought it was important to backfill this area so that the highway contractor would not have to take equipment up to the right-of-way boundary. The only features in this area were historic posts, which had already been mapped. Extending the plowzone testing to the west exposed more historic posts and a third prehistoric/natural feature.

At least four fence lines could be distinguished in the approximately 42 historic posts uncovered. Fence A ran north to south close to the right-of-way boundary. The holes were oval or rectangular, averaging about 1.6 feet long, with an interval that varied from 8 to 13 feet. Most of them did not have clear molds. One hole in this line was tested, and it proved to be 6 inches deep; it contained no artifacts and there was no visible post mold. Fence B also ran north to south, about 40 feet west of Fence A. The holes in Fence B were large and square, approximately 1.8 feet on a side, with clear and rather small post molds. The interval was a regular 10 feet. Fence B stopped before reaching the northern boundary of the stripped area. At its southern end Fence B turned east at a 90 degree angle, but there was only a single hole in the eastward line. One hole in Fence B was excavated; it was 11 inches deep and contained no artifacts.

Fence C formed a corner near the center of the stripped area, running north and east from that point. The

holes closely resembled those in Fence A, and the two fences may in fact have been connected. The interval in Fence C also varied from 8 to 13 feet. Fence C overlapped Fence B, showing that the fences represent at least two distinct periods.

Fence D included at least four posts in a north-south line west of Fences C and B. The holes were rather small and mostly oval, with an interval of 11.5 feet. Fence D may have been connected at each end to a fence running east, but these possible fences were highly irregular, with large gaps between some of the holes. If these irregular lines were fences, they overlapped Fences B and C, representing yet a third period. Fence D ran roughly along the current property line, which appears to be in approximately the same place as the western boundary of Sarah Dains's Lot 3, within which the Augustine Creek North Site was located.

Taken together, the fences give the impression that they surrounded an area measuring roughly 50 by 80 feet, mostly within the stripped area. It is tempting to equate this fenced area with the orchard mentioned in the 1790 deeds. However, it could also have been a garden or an animal pen. The lack of artifacts in the plowzone and in the tested postholes certainly argues that this area was not the site of a house or a domestic yard.

2. The Layout of the Site

Because most of the Augustine Creek North Site was not excavated, few features were found that might directly clarify the layout of the farm. The only information we have is the evidence of the fences, the position of the small cellar identified during the previous testing (Chapter I), and the distribution of the artifacts in the plowzone. Figure 17 shows the artifact distribution. The highest counts were found in Test Units 13, 16, and 27, southeast of the house, and in Test Unit 21 to the southwest. Breaking down this distribution into its component parts, such as bricks, redware, and refined earthenwares, adds little information, because the distributions are all just about the same. One might have expected more brick and nails to have been found around the cellar hole, where the house from the earlier period stood, but this was not the case (Figure 18). Did the later occupants of the site, after 1790, build a new house near the concentration of brick fragments, in a different place than the earlier structure? Probably not. Comparing the distribution of artifacts datable to the earlier occupation (white salt-glazed stoneware, Westerwald stoneware, and "Midlands Mottled" ware) to the distribution of later artifacts (creamware and pearlware) shows no difference. Instead, the explanation for the concentration of bricks away from the cellar is probably topographic. The plowzone in Test Units 13, 16, and 27 was 16 to 28 inches thick, compared to 6 to 10 inches in the units around the cellar hole. When the site was occupied, the area of high artifact concentration was a low spot that has since been filled in by plowing. Test Unit 21 was at the edge of the modern plowed field, where soil washing down the slope has built up into a deposit 36 to 60 inches thick. Taking into account the build-up of soil in these low areas, the artifact density across the center of the site is fairly consistent (Figure 19). This artifact scatter surrounds the cellar hole, but the highest density was downhill, to the southeast. Some work most likely took place all around the house, but the main working yard was probably located in the area of the high artifact density.

What is most interesting about the landscape of the Augustine Creek North Site, based on the information available to us now, is the site's location (Plate 11). Every historical archaeologist who visited the site had the same reaction to the spot: all thought it a strange place for an eighteenth-century site. On the north bank of Augustine Creek the ground sloped gently upward to the north, with no steep bluff like the one on the south side of the creek. The site was right next to the floodplain; the cellar hole was about 60 feet away from, and 5 feet above, the swamps along the stream (Figure 20). During major floods, most of the front yard must have been under water. In the eighteenth century Europeans believed that swamps were very unhealthy, and since malarial mosquitos were found in Delaware, they were right. No settler who could have afforded not to would have built in such a spot. The site was also sloping, and the British colonists, at least, always preferred

to put their houses on level ground. A sloping site, next to wetlands, was doubly unusual. Because the location of the site was so undesirable, and because the site itself was so small, we believe the site was occupied by poor tenants.

In nineteenth- and early twentieth-century Delaware, houses built on swampy ground were often occupied by African-Americans or the Indians sometimes known as Moors (Bedell and Vernay 1997; Heite and Blume 1995). We do not know when this pattern was established, but the major factors responsible for the relegation of minority groups to the swamps—racism, the poverty of African and Native Americans, and the preference of whites for high ground—were all present in the eighteenth century as well. The poor tenants at Augustine Creek North may, therefore, have been members of a minority group. Since the documented Native American groups in Delaware lived farther south, in Kent and Sussex counties, it seems much more likely that the site's tenants were black.

D. OTHER DELAWARE SITES

To reach the project's goal of understanding what life was like for ordinary Delawareans in the 1700s, it helps to compare what we found at the Augustine Creek sites with what has been learned from other sites, as well as what we can learn from written records such as tax rolls. Information on how farms were laid out is available from several other eighteenth-century archaeological sites in Delaware. The four sites presented here were all the homes of ordinary or poor people, and good information on the layout of the farm was recovered at all of them.

1. The John Powell Site, 1690-1730

The John Powell Site in Kent County was occupied from about 1690 to 1730, first by John Powell and his family and then by unknown tenants (Figure 21). Excavation of this site by the University of Delaware in 1992 revealed more than 80 cultural features and a complex farm plan (Grettler et al. 1995). At least six structures were identified. The confusing remains of the house are discussed below, in Chapter III. The other structures included a large post building identified as a tobacco barn, a smaller post building, and three rectangular pits that were identified as subfloor pits. The only fences were highly irregular pieces that did not connect in any clear way.

One of the striking features of this site, and one repeated at the Benjamin Wynn and William Strickland sites (discussed below), was that all of the post building patterns were incomplete. Outbuilding V, the tobacco house, consisted of three large corner posts, with one post along one of the long sides and three along the other; the southeast corner post was missing. Since this building measured about 20 by 40 feet, one might have expected it to have more impressive foundations than it actually had. Outbuilding IV, the smaller post building, was quite far from rectangular and was also missing one corner. Another post pattern very similar to the one designated Outbuilding IV was present as well, and the site report does not say why the excavators did not also designate it as a structure. These confusing foundations suggest buildings constructed in a truly haphazard way, without regular spacing between structural members, and possibly with foundations made in more than one way.

These structures at the John Powell Site were arranged in a rough line or arc, with the house in the center, the tobacco barn to the west, and Outbuilding IV to the east. The other small outbuildings were north and northwest of the house, and the possible post building, not identified by the excavators, was south of the house. All of the buildings shared approximately the same alignment. The well was southeast of the house, near Outbuilding IV. The highest artifact counts in the plowzone were found on the southeast side of the house, in the yard bounded by the house, Outbuilding IV, and the well. Much less domestic material was found on the other side of the house or around the tobacco barn. The whole arrangement of buildings and

fences measured about 160 by 100 feet.

2. The Whitten Road Site, 1750-1800

The Whitten Road Site in New Castle County was excavated by the University of Delaware in 1985 (Shaffer et al. 1988). Artifacts in the plowzone showed that the site was occupied for quite a long time, from perhaps 1750 until after 1820. However, the only buildings found on the site were three post-in-the-ground structures that were probably occupied during the eighteenth century (Figure 22). Such buildings could never have lasted for the entire span of the site's history. No trace at all remained of the buildings from the site's later years, although a well that was filled in after 1820 was found. The later buildings must have been constructed on brick piers or wooden blocks. No evidence of fences was found.

One of the surviving eighteenth-century buildings was identified as a house, and it is described in Chapter III. The other two were earthfast or post-in-the-ground buildings. Both of these buildings were 10 feet wide, and both were made up of pairs of posts placed at regular intervals. Structure II, which was closer to the house, was made up of three pairs of posts at 11-foot intervals, so it was 22 feet long. Structure III was made up of four pairs of posts at intervals of about 9 feet, and was 28 feet long. All of the postholes were present in both buildings. These were the first earthfast buildings identified in Delaware, and they were nearly identical to many that had already been identified in Maryland and Virginia. Structure II was only about 10 feet from the house, and its east side was in line with the east wall of the house. Structure III was about 35 feet west of Structure II and did not quite align with the other two buildings. The highest counts of eighteenth-century artifacts were found in the yard between Structures II and III. The farm seems to have been laid out on the courtyard plan, one of the most common types in the Middle Atlantic region, and in much of Europe (Glassie 1972).

3. The Benjamin Wynn House and Blacksmith Shop, 1765-1820

The Benjamin Wynn House and Blacksmith Shop, located near Dover in Kent County, was a tenant farm occupied from 1765 until about 1800 by Benjamin Wynn, a blacksmith, and then by unknown persons (Grettler et al. 1996). The main features found at the site were a house, a blacksmith shop, and two wells. The house was defined by the excavators based on a small cellar and a very partial posthole pattern. The surviving evidence of the blacksmith shop consisted of two cellar holes that defined a rough rectangle measuring about 10 by 24 feet, along with several postholes that appeared to be associated with the cellars but did not define any clear pattern. The cellars were up to 2 feet deep and were filled with coal ash and other forge waste. No nineteenth-century artifacts were found in the cellars, so they were probably filled in, and the forge abandoned, before the last stage of the site's history. The two buildings were located about 50 feet apart in a bent line (Figure 23). Both wells, one filled in the eighteenth century and one in the nineteenth, were located on the same side of the house, which investigators identified as the back yard. The highest plowzone artifact densities were in the front yard, in between the two buildings.

4. The Marsh Grass Site, 1780-1820

One of the most interesting eighteenth-century farm plans in the state was revealed by Ron Thomas (1983) and his collaborators at the Marsh Grass Site near Lewes in Sussex County. This site, occupied from about 1780 to 1820 by unknown tenants, consisted of a post-in-the-ground house and a yard (Figure 24). The rectangular yard, which measured 96 by 118 feet, was surrounded by a ditch and hedge. The house was near one corner of the yard, and there were concentrations of artifacts in two of the other corners that the excavators believed might have been the remains of outbuildings. This yard is strikingly different from the rather random agglomerations of buildings and fence fragments found on other Delaware farms of this period. However, it does not represent a new style of building, but a very old one. The yard resembles the "tofts"

found in the open field villages of medieval Europe. In these communities each villager owned two kinds of property, strips of land in the open fields around the village and a toft, a fenced or hedged yard containing a house, a garden, and outbuildings. It is hard even to guess how such a farm came to be built in the marshy country around Lewes, especially so late in the eighteenth century. The site reminds us that every human community includes individualists, people whose behavior does not conform to the standards of their neighbors.

5. Summary

Except for the Marsh Grass Site, all of the ordinary farms excavated to date in Delaware have been found to have similar plans. Each consists of a house and from one to five outbuildings. The buildings are not aligned precisely with one another or laid out in any clear geometrical plan. The Whitten Road Site does appear to have been grouped around a courtyard, but only in a rough way. The John Powell Site must have looked like a nearly random assemblage of sheds. Most of the outbuildings for which evidence survives were small post-in-the-ground structures. The largest barn identified was the 20- by 40-foot structure at the John Powell Site, and none of the identified buildings had substantial stone or brick foundations. Each site had a working yard, defined by high concentrations of domestic artifacts in the plowzone. Two Delaware sites of somewhat higher status, the William Strickland Plantation (1726-1764) (Figure 25) and the Charles Robinson Plantation (1762-1781) (Thomas et al. 1994) had similar layouts, each consisting of a house surrounded by several outbuildings defined by incomplete post patterns. No formal arrangements of buildings, carefully prepared approaches, or formal gardens have been identified on eighteenth-century Delaware sites, nor is there any other evidence to indicate that Renaissance conceptions of order made any impact on farmers in the region. As Hannah Heaton, a Connecticut farm woman, wrote in 1781, they looked out their doors and saw "a company of chickens scratching and picking in the mud" (Lacey 1988:287).

E. FARMS IN THE RECORDS

1. Tax Rolls

wo categories of written records provide useful information on the layout of farms in eighteenth-century Delaware, the tax rolls and the records of the Orphans' Court. The first detailed Delaware tax rolls date to 1797, at the very end of our period, but they are nevertheless quite useful for helping us imagine the average farm at that date. The tax rolls include the assessed wealth of each free adult in land, livestock, slaves, and silver plate, and they list the buildings on each farm. These lists appear to be incomplete, since they include mostly houses and barns and not the numerous smaller buildings we know were present on many farms. It seems that only the valuable buildings, those that contributed most to the taxable value of the house, were listed. The material of the buildings is sometimes given as well, especially for houses.

One of the better sets of these records was taken in 1797 for St. Georges Hundred, where the Augustine Creek sites were located. The assessor, Christopher Vandergrift, made quite detailed descriptions of many farms, including small outbuildings. The list is arranged in alphabetical order, and for names beginning with the letters A through D the description usually includes the material of the house. Beyond D the scribe who wrote the final list seems to have become tired of recording this information, and after that the building materials are only rarely mentioned. The tax roll lists 155 properties, from James Derrah's unimproved 8-acre lot to Robert Haughy's 3,039-acre plantation, which boasted "13 houses, kitchens, barns, stables, cribs, granary." Properties were assessed with every number of buildings from zero to 15, but nearly half of the farms had either four or five buildings; the average was about 3.7 buildings per property.

Table 4 shows the number of the most common types of outbuildings recorded. The most common types were kitchens, barns, stables, and corncribs. The common four- or five-building farm usually included a

house, a kitchen, a barn or stable, and a crib or granary. Other buildings were much less common. Dairies or milk houses were fairly common in the northern part of the county, closer to Philadelphia, but only one was recorded in St. Georges Hundred. Only two "negro quarters" were noted, so most of the hundred's 547 slaves must have lived in the main house or a kitchen.

Since the tax rolls also include figures for the total wealth of each taxpayer, it is easy to compare the number of outbuildings on a farm with the wealth of its owner. The figures are not complete, because only wealth kept in St. Georges Hundred is listed, and some of the richer people may have owned land in several jurisdictions. As one would expect, the richer farmers had more outbuildings and a greater variety of types. The average for the top tenth of residents was 5.3 buildings per property, as compared to about three for the remainder of the sample. There were, however, many exceptions. Robert Maxwell had only a house and barn on his valuable 536-acre estate, and Jacob King had only a house and kitchen on his 160-acre farm. On the other hand, numerous smaller farmers had five and even six buildings.

Particularly interesting is the number of outbuildings on some tenant farms. Many of the absentee owners were taxed on what was clearly a single farm, leased to one tenant, and some of these farms were large and well-equipped. Lewis Vandergrift was leasing out a 302-acre farm with a house, kitchen, barn, stable, granary, and crib, while David Kennedy leased out a 280-acre farm with a brick house, kitchen, stable, and crib. In this society "tenant" did not imply "poor," and many tenant farms were indistinguishable from those of middling property owners.

2. Orphans' Court

The most detailed records on the farms and houses of eighteenth-century Delaware are those of the Orphans' Court, a branch of the Court of Chancery. When orphaned children inherited property, the court appointed guardians to look after the children and their assets. When the orphans came of age, the guardians were supposed to hand their property back in the same condition as they had found it. To make sure that the guardians did this, the court usually recorded an assessment of the property at the time the guardian took over its management. Some of these assessments contain only cursory descriptions of the property, but some are quite detailed. An assessment of the property of Samuel Carpenter, made in April, 1778, runs as follows:

> We the subscribers being Ordered by the above Rule of Court have Been on the Lands and Premises Late of Samuel Carpenter Dec'd, of St. Georges Hundred and Viewed the Same and find it Contains Two Hundred Acres of Land, Marsh & Cripple Ninety Acres whereof is Drain'd Marsh in Midling Order Ten Acres or there abouts not in order about sixty-five acres of cleared upland in tolerable good fence the Remainder Wood Land whereon is One Logg Dwelling House two stories high wants some Repairs such as two Hearths layed and twelve sash lights [window panes] in the Windows One Logg Kitchen in good Repair one Draw Well a paled Garden in Midling Order one Meat house in Good Repair One smiths shop in Repair one Logg Stable and hen house in Midling Repair One Corn Crib One Large Frame Barn wants some Repairs on the South End struck with thunder One Young Apple Orchard Containing seventy seven trees One Logg House not tenantable [NCC Orphans' Court Case Files, Samuel Carpenter 1778].

The description is typical in that it does not indicate how large any of these structures were, nor whether the house had a cellar. On the other hand, it does indicate the material of many of the structures, and it does mention the orchard and the garden, two items hard to learn about from any other source. The particular vividness of these documents comes in the accounts of the condition of the buildings, especially those falling down. Samuel Carpenter's farm included a log house too badly run down even to lease to tenants, the house had 12 broken window panes, and the barn had been damaged by lightning. In our research in the eighteenth-

century Orphans' Court records we have yet to find a single farm where all the buildings were pronounced to be in good order. Even at the valuable estate of Peter Alrich, which in 1795 included a brick "mansion house" and six other buildings, the assessors found that the house needed a new porch and 35 window panes, the jambs on the cellar doors were broken, the kitchen was "not worth repairing," the other buildings were in "Tolerable good repair excepting the doors of the Chair house [carriage house] which are wanting," and the 120 acres of drained marsh were "mostly in bad repair, the drains want clearing" (NCC Orphans' Court Case Files, Peter Alrich 1795).

Any sort of real estate could wind up in the Orphans' Court, from large farms like Peter Alrich's to the property of Thomas Adams, which in 1799 consisted of 18 acres of land and "a small Log Messuage [house] scarcely Tenantable, a Sawed Log Barn about forty four by twenty four feet, in but indifferent repair, and about twenty one scattered Apple Trees." Figure 26 shows a sketch of another small farm made for an Orphans' Court record (Sussex County Orphans' Court Case Files, John Ingram 1796). Benjamin Bunker died in 1795, leaving only "one old house in bad repair." Farms with four to five buildings are quite common, just as they are in the 1797 tax records. One such estate belonged to Francis Allen, who died in 1785: "there is on the Premises One Dwelling House which wants new shingling, One Kitchen which wants shingling, One Smoke House, One Barn which wants new flooring, and two hundred Apple trees" (NCC Orphans' Court Case Files, Thomas J. Adams 1799-1802, Benjamin Bunker 1795, Francis Alexander 1785).

Bernard Herman and his assistants at the University of Delaware's Center for Historic Architecture and Design have made a detailed statistical study of the surviving Orphans' Court cases from the 1770 to 1830 period for most of Delaware (Table 5). The surviving cases become more common after the American Revolution, so at least two-thirds of Herman's cases probably date to after 1800. However, things rarely change dramatically just because the calendar turns over, and these figures are still very valuable for our purposes.

One difference between the Orphans' Court descriptions and the tax rolls is that the Orphans' Court accounts mention more small outbuildings, such as smokehouses, carriage houses (which could be used for wagons as well as carriages), and chicken coops. Perhaps these structures had little monetary value, so they escaped the attention of the tax assessor. Their addition raises the average number of buildings per farm, which goes up in St. Georges Hundred from 3.7 to 4.4, and we see more farms with as many as 10 to 12 buildings. One interesting feature of the accounts is that we can use them to identify the properties of craftsmen who had their own shops. Smiths, wheelwrights, and cartwrights (wagon makers) all make appearances. On these properties there were fewer other buildings (about three per property, versus about four overall) and on two properties the shop and the house were the only buildings present. For example, John Belville's property was said in 1802 to include "a Dwelling House with Cellar underneath, a wheelwrights shop, in the Garden on Said premises are a few fruit trees." The Benjamin Wynn Site, where the only identified structures were the house and a blacksmith's shop, seems to have been a common sort of property.

About 40 percent of the properties in St. Georges, Appoquinimink, and Duck Creek hundreds had apple orchards, and about 10 percent had peach trees. Since the writ from the court to the assessors specifically orders that orchards be inventoried, this number is probably fairly accurate. Gardens are mentioned in about a third of the accounts, but probably most houses had a garden of some kind. These gardens were almost certainly purely functional. Most eighteenth-century gardeners grew vegetables and herbs, not flowers (Brown and Samford 1990; Garrison 1991; Martin 1990). Martha Ballard, a midwife who lived in Maine, kept a detailed diary for the years 1785 to 1812, and she made many entries about her garden. She worked in it frequently, and she sometimes supplemented her income by selling produce and seed. She was proud of her gardening prowess. For example, she noted with satisfaction that she once harvested a basket of pole beans on July 11. The vegetables she grew included beans, peas, radishes, cucumbers, turnips, carrots, lettuce, parsnips, watermelon, pumpkins, squash, peppers, onions, and garlic. She also grew herbs that she used in

her medical practice, including sage, saffron, coriander, anise, mustard, marigolds, camomile, parsley, and many others. But she did not grow flowers. In fact, she wrote not one word in 27 years about how the garden looked. She rarely even mentioned weeding; she probably pulled just enough weeds to give her own plants room to grow, not worrying about neatness as long as the garden was producing food (Ulrich 1990:324-329).

Archaeology has confirmed this picture of predominantly practical gardening in the eighteenth century. Although some formally laid out gardens have been identified, they belonged mostly to the rich (Kelso and Most 1990). Even in these gardens most of the plants were chosen for their practical value as well as their beauty, as in the avenue of cherry trees at Germana in Virginia or John Calvert's Orangery in Annapolis, Maryland (Sanford 1990; Yentsch 1990). Evidence from ordinary households suggests rather haphazard garden beds and irregularly shaped gardens, as at the Augustine Creek South Site, planted in vegetables and herbs. Flotation of soil from rural eighteenth-century sites in Delaware has yielded seeds only of food plants, such as the corn and wheat recovered from Augustine Creek South, wheat, peach pits, and nut shells from the William Strickland Plantation, and corn, blueberry, raspberry, black walnut, and hickory nuts from a deep well at the John Powell Plantation (Catts et al. 1995; Grettler et al. 1995). However, the excavators of the Old Swedes Church parsonage in Wilmington, where records indicate a "kitchen garden," did find a single seed each of the decorative plants bedstraw and forget-me-not, as well as blackberry, blueberry, elderberry, mustard, and squash (LeeDecker et al. 1990).

F. SUMMARY

The combination of archaeology and written records allows us to give a fairly thorough description of the average Delaware farm in the eighteenth century. The farm consisted of a house and two to seven outbuildings, possibly including a detached kitchen, a barn, a stable, a granary or corncrib, and a smokehouse. All of the structures were frame or log, and most were not built very well or kept in very good repair. Their foundations were ground-set posts or brick piers. They were arranged rather haphazardly around the house, so that it is usually impossible to tell from the plan where the front door of the house was. There was a fenced garden, where vegetables and herbs were grown. The garden was probably not rectangular or formally laid out; instead, it was shaped to conform to the layout of the farm and the landscape. The fence was made of split pales and it was probably not in good repair. An apple orchard was close by. Animals wandered about, trash was scattered in all the yards, and work was done wherever it was most convenient. No part of the yard was set aside to be kept as a pretty area, and nothing about the farms suggests that the residents had any interest in enlightened ideas about how a gentleman ought to organize his farm. The Mahoe/Wallace farm at Augustine Creek South, with its frame buildings, haphazard arrangement, and trash-strewn yard, seems to have been rather typical.

We know less about the tenant farm at Augustine Creek North, but the documentary research allows us to build on the limited archaeological work. The house was log and probably had shallow brick foundations. In the muddy yard, chickens and pigs searched for food amidst the trash. There may have been one or two log outbuildings, but probably no more. Uphill from the house there was most likely a small garden, and beyond that the property owner's fields.

III. HOUSES

A. HOUSING AND CULTURE

Housing is one of the most important parts of our material culture. Few objects so strongly shape the way we go about our lives as do our houses. Our houses are also statements about our values. For example, many contemporary American houses are designed to give each occupant a great amount of privacy, and the notion of whole families living together in a single room may be disturbing to us. But privacy is *our* value. The desire to be alone was not shared by many people in the past; in fact, it is not shared by many people in the world today. Our houses also reflect our habit of separating our work from the other parts of our lives. We have separate kitchens, and those of us who work for pay at home often have separate offices or workshops. The appearance of our houses expresses our ideas about beauty and proper form. If we are to study people's lives using material objects, their housing is one of the first things we must consider.

A number of houses built during the eighteenth century are still standing in Delaware, and many more can be found in the rest of the old thirteen colonies (Plate 12). It would seem, therefore, that the easiest way to learn about the kinds of houses people lived in 250 years ago would be to simply visit some of them. Indeed, one can learn a great deal from such visits.

But such visits would also mislead us. Americans commonly believe that "they don't build 'em like they used to." The old houses that are still around have massive stone and brick foundations, and the floors and roofs are held up by wooden beams at least twice the size of the two-by-fours we commonly employ. The houses of our own day, we may think, are built in a shoddy, shortsighted manner and will soon be gone, while our ancestors' houses were built to last. A moment's reflection would remind us that the old houses that are still standing were indeed exceptionally well built, or they would be gone. In fact, almost all eighteenth-century houses are gone. The few that survive, less than one percent of those that were built, are extraordinary. Also, most of the surviving examples have been extensively renovated, and many have been greatly enlarged. The typical house may have been much different from the exceptional few we can still see.

Many of the surviving eighteenth-century houses are also maintained in a misleading way. James Deetz (1977:157) described a visit to the typical colonial house museum in New England like this:

> Guides in starched costumes direct the visitor through neatly arranged houses often furnished with matching artifacts that are not typical of the time being revisited, homes that seem to have been inhabited by people who subsisted largely on the herbs growing in the adjacent garden and who dipped enough candles to light a small town.

For an accurate picture of past houses, and the lives people lived inside them, we must look elsewhere. Some kinds of written documents can tell us a great deal, and archaeology can also help.

B. RECORDS

Many kinds of records can help us learn about the houses of eighteenth-century Delaware, including tax rolls and the many small drawings of houses made on plats and other documents by surveyors (Figure 27). However, the most useful records are those of the Orphans' Court. As we saw in the last chapter, these accounts, made when an orphan's property passed through the court's hands, often describe farms in considerable detail. These accounts often describe the material from which the house was built and they sometimes tell how many stories it had. Usually, they describe the condition of the house. On the estate of Samuel Allen, 1778, the assessors found "a Frame Dwelling House wanting a joice in lower floor, the Sills to

be Repaired." At the "Mill Plantation" of John Burgess, in 1793, the assessors found a two-story frame house with a cellar and "two rooms on the lower floor." Each room had a hearth and chimney, and the windows were missing 44 window panes on the lower floor and 34 on the upper. A log kitchen was attached. These and similar accounts summon up contradictory images, for even the largest and most refined houses were often in disrepair. How could the house at Mill Plantation be missing 78 window panes? Did a hurricane blow through, or had they just not replaced any broken glass for 10 years? Such numbers certainly explain why archaeologists always find hundreds of fragments of window glass around colonial houses. Samuel Allen's frame house needed major structural work, since the floor joists and the sills are what hold a frame house up. In 1797 Abner Allston's frame house "wants the roof repaired and weather bording the windows glazed." Nor could he escape from the rain in any of his other buildings, since his barn, granary, oven, and stable all needed roof repairs as well. Table 6 summarizes the conditions Orphans' Court assessors reported for houses in three central Delaware hundreds in the 1770 to 1830 period. Even if we assume that all the houses that were not described were in good condition, those in bad or middling condition were still the majority. In Appoquinimink Hundred, an actual majority of houses were said to be in bad condition. It is interesting to note that in these records "old" seems to be a synonym for "bad," again undercutting the idea that people of the 1700s built their houses to last any more than we do.

Table 7, also based on the Orphans' Court records, shows the material of houses in the same three hundreds. Most houses were log or frame ("wood" must mean one or the other). There was a substantial minority of brick houses, but many of them were probably constructed in the early 1800s (Chappell 1994; De Cunzo et al. 1992:41). In the eighteenth century brick houses probably made up no more than a tenth of the total, and even though brick construction was more expensive than wood, we should not assume that all of the brick houses were well built (NCC Survey Book). The assessors noted several brick houses in bad condition, and problems with roofs and windows were common. At Arlington, on the eastern shore of Virginia, John Custis built himself a grand brick house three stories tall around 1670. The house had a vaulted cellar, molded plaster work, and other refinements. But it was so poorly built that it began to fall down within a few decades of its completion. Archaeology showed that the wooden scaffolding had had to be put back up, and the house was probably covered with scaffolding for the rest of its 50-year life. The foundations of the house were so shallow that when archaeologists uncovered them, they found that most parts had been entirely plowed away and what remained was only one brick deep (Bedell and Luccketti 1988). Some builders used brick because they wanted their houses to last, but others, like John Custis, were just trying to keep up with the fashion and had no more thought for the permanence of the structure than their neighbors who were building in wood.

The word "tenantable," which occurs in several descriptions, raises the question of whether tenants lived in worse houses than property owners. The answer seems to be, as with most interesting questions, that it depended on the circumstances. Some farms came equipped with a main dwelling house and a separate tenant house, or "tenement." In 1798, John Deakyne's property included "one Dwelling Hous in Middlin Repear" and two "cabins," which were presumably small houses for tenants. Andrew Fisher, who died in 1805, owned several tracts of land, including one with "a small log house in the occupancy of John Mullin and in bad repair." Figure 28 presents a sketch drawn in 1802 by an unknown surveyor showing a large farm on the Delaware River with a small tenant house on each neck of land (NCC Survey Book). In other cases, a whole property will be described as a tenement, as in the assessment of Daniel Cable's property made in 1798. The assessors reported "a log tenement with two rooms on a floor two story high with a small log shed building adjoining, about fifty acres of land with all the fencing in bad repair, also five acres of marsh tolerably fenced." These properties included no brick houses; all "tenements" were wooden, and all but a few were log. In general, tenements do seem to have been smaller and in worse condition than owner-occupied houses. However, this was not true in every case. The home of Daniel Cable's tenants, with two rooms on each floor, was bigger than many houses occupied by their owners. Besides these designated tenements, as we saw in the first chapter, many large, well-appointed farms were leased to tenants. These farms may have been occupied for a time by their owners, or they may have been built by tenants who felt secure about their

leases. On these properties we find brick houses, mills, and numerous outbuildings, and we would have trouble distinguishing them from properties where the owner was in residence. This sort of tenant, whose farm was very similar to those of most property owners, lived in a house similar to an owner's as well.

The Orphans' Court records do sometimes specify the size of a building, but only rarely, and the information is suspect. It may be that the dimensions of a house or barn are given only because they are unusual. It is therefore dangerous to generalize from the few numbers these records provide. The height of the house in stories is given more often in these records, but only in a minority of cases, and it is almost always two or one-and-a-half stories (one full story with a habitable loft). When it is not given, does it mean that the height of the house was one story, or simply that the assessors did not bother to write the height down? Despite their richness, the Orphans' Court records leave many questions about eighteenth-century houses unanswered.

C. ARCHAEOLOGY

1. Previously Excavated Sites

Prior to the excavation of the Augustine Creek sites, five eighteenth-century sites that provide information on the housing of ordinary and poor people in the state had been excavated in Delaware (Table 8). These are the John Powell Site (Grettler et al. 1995), the Whitten Road Site (Shaffer et al. 1988), the Benjamin Wynn House and Blacksmith Shop (Grettler et al. 1996), the Thompson's Loss and Gain Site (Guerrant 1988), and the Marsh Grass Site (Thomas 1983). The William Strickland Plantation Site (Catts et al. 1995) and the tenant phase of the McKean/Cochran Farm Site (Bedell et al. 1998) represent households of above average status, but the houses discovered on those two sites still fit rather well with what was found on the other sites.

On the majority of these sites, evidence of the main house was actually meager. No foundations of any kind were found at the Bloomsbury Site, an eighteenth-century tenant farm near Dover (Heite et al. 1998), and there was no trace of the later structures that must have stood at the Whitten Road Site. At the John Powell Site, the investigators identified two possible houses (Figure 29). One was defined solely on the basis of a group of shallow pits covering an area about 18 feet square; at one end of this complex was a somewhat deeper pit containing ash and brick pieces, and the investigators identified this pit as a chimney base. Adjacent to this complex was a shallow pit measuring about 15 feet square, within which were clear stains left by wooden sills. (Sills are the beams that run along the bottom of a wall.) These sills, which were about six inches thick, formed a square measuring about 10 by 11 feet. We can only guess what sort of house once stood over this confusing agglomeration of pits. One possibility is that the 10x11-foot pattern of wooden sills defined the entire house, but this seems absurdly small. It is more likely that the 10x11-foot structure was an addition to a house, measuring about 15 feet square, that stood over the adjacent pits. But we really do not know.

The only sites for which we can give the actual size of the house with a high degree of confidence are Thompson's Loss and Gain, where the house was supported by posts set in deep holes that survived clearly (Figure 30), and the earlier phase of the McKean/Cochran Farm, where the house had a full basement and stone foundations (Figure 31). Otherwise we have only hints. Eighteenth-century builders used several techniques that leave little or no trace on a plowed site. Sometimes wooden wall sills were laid directly on the ground, as in the 10x11-foot structure at the John Powell Site. Log structures often had thin brick or stone foundations that were set in very shallow trenches or even directly on the ground surface. Frame buildings were sometimes raised on brick piers (small, square foundation piles put under the corners and other structural points). These, too, were often set directly on the ground, and only rarely was one dug deep enough to have survived plowing. Sometimes wooden blocks were used as piers instead of brick. These might be set in quite deep holes or set on the surface. In Delaware we frequently find partial post patterns defining some parts of a building, and one possible explanation for these patterns is that the houses were set on wooden blocks that

were dug into the soil to differing depths. The deeper holes have survived and the shallow ones have been plowed away. Buildings with only partial post patterns have been identified at the John Powell, Whitten Road, Benjamin Wynn, Marsh Grass, and William Strickland sites (see Figures 21-25).

What kinds of houses stood over these ephemeral foundations? Certainly they were not grand. If they were raised on wooden blocks, their supports were in constant danger from termites and rot and would not have lasted more than a decade or so. Perhaps the irregularities in the post patterns of these houses stem in part from frequent repairs. Brick piers last longer, but if they are not set in deep holes they tend to settle unevenly, leaving the building askew. Window glass and brick were found on all but one of these sites, so the houses did have glass windows and fireproof chimneys. Only Thompson's Loss and Gain had clay and wood chimneys. The size of the houses, as reported from archaeological data, is interesting. Most documentary information suggests that the average eighteenth-century house was either a single room measuring 15 to 20 feet square, or a two-room plan measuring 15 to 18 feet by 24 to 30 feet (Chappell 1994; Herman 1987). The earlier house at the McKean/Cochran Farm, a one-room plan measuring 15 by 18 feet, is what architectural historians think of as typical for the period. However, it is the smallest of the houses excavated in Delaware to date. Most of them seem to be of the larger, two-room pattern, and the 24x30-foot Benjamin Wynn house is really quite large.

The Benjamin Wynn house may, however, have started out much smaller than its final size. The excavators of the Whitten Road Site interpreted the house there as a small post-in-the-ground structure with a large addition (Figure 32). The Orphans' Court documents describe many houses with sheds and porches attached, and many of the surviving eighteenth-century houses have been added to many times (Herman 1987). In the Orphans' Court records from St. Georges Hundred, more than 10 percent of houses had attached kitchens. Figure 33 shows a sketch of a house with an attached shed, drawn on an Orphans' Court record (Sussex County Orphans' Court Case Files, William Percy 1824). The frequent building of such additions may also help explain the confused nature of some of these house foundations.

One feature that always survives archaeologically is a cellar hole. Cellars of some kind were found at the William Strickland, Thompson's Loss and Gain, Benjamin Wynn, McKean/Cochran, and Marsh Grass sites. Only the McKean/Cochran house had a full basement. The other houses had only small storage cellars. The largest, William Strickland's 16x7-foot cellar, was about one foot deep below the plowzone.

2. The Augustine Creek South Site

a. Feature 1, the Cellar

The archaeological evidence of the Mahoes' house at the Augustine Creek South Site was a cellar hole, designated Feature 1. The cellar measured about 16 by 25 feet and was 3.8 feet deep, below the plowzone (Figure 34). This was the earliest full basement that has so far been discovered in Delaware, and only the second one in the state identified at an eighteenth-century archaeological site.

We began the excavation of the cellar by using nails and string to lay out a grid of 1x1-meter squares across its surface. We assigned each square a number so that we would be able to tell what part of the cellar each artifact came from. The excavation was begun by hand, using shovels and trowels. The first units we dug formed a trench running north to south across the cellar, so that we could get a good idea of its contents (Plate 13). The soil inside a feature like a cellar hole is called the *fill* by archaeologists. The fill in this cellar was made up of different layers, or strata. Stratum A, the top fill across the feature, was a brown silt loam, closely resembling the plowzone, that had undoubtedly washed into the cellar hole (Figure 35). Stratum A contained numerous eighteenth-century artifacts, but most of them were small and all of them appeared to have simply washed in with the soil. Stratum A averaged about 1.9 feet in depth across the feature; it was somewhat

shallower around the edges, although not markedly so.

Beneath Stratum A was a series of soil lenses, some containing brick and stone rubble, designated Stratum B. In the center of the feature, Stratum B was capped by an uneven, patchy layer of sterile soil closely resembling the surrounding subsoil. This layer was about 2 inches thick. The depth of Stratum B varied, but it averaged about 1.3 feet. Stratum B was distinctly different in the northern and southern halves of the cellar. In the southern half it was dark grayish brown in color and contained numerous artifacts. In the northern half it was lighter and yellower in color and contained fewer artifacts. No abrupt line between these two fills was apparent, but the difference in color and artifact content was clear. In Unit 88, in the northern half of the cellar, Stratum B yielded 45 artifacts, but in Unit 111, in the southern half, it yielded 480 artifacts.
When a brick house, or a house with brick foundations, was torn down, the bricks were usually salvaged for use in some other structure. Bricks that broke during the salvaging operation were thrown into the cellar hole, forming a dense layer of brick rubble that is often mixed with trash. Stratum B seemed to contain too many large bricks to have simply washed into the cellar; on the other hand, it contained too few to be a typical destruction layer. The subsoil on top of this layer must have been dumped into the half-filled cellar hole, probably after having been excavated from some nearby pit. The remainder of Stratum B may also have been placed in the hole, though why anyone would intentionally fill in a cellar hole at an abandoned farm is a mystery.

Toward the bottom of Stratum B, in the southern half of the feature, the amount of brick and stone rubble increased (Plate 14). This deposit contained large pieces of brick, including a few whole bricks, some of them with remnants of soft shell mortar attached. The stones were natural river cobbles, none more than about a foot long and some much smaller. Some of the stones also had attachedmortar. Within this rubble zone were pockets of soil containing large potsherds and other domestic artifacts; in other places the soil in the rubble was nearly devoid of artifacts. In the northern half of the feature the dense rubble zone was generally not present. This rubble deposit was much more typical of what one usually finds in old cellars than the thin scatter of brick in Stratum B.

Beneath the rubble zone in the southern half of the feature was a deposit of what appeared to be household trash, about 4 inches thick, which we called Stratum C. This soil was dark grayish brown silt loam, mixed with black ash, white ash, oyster shell, and numerous artifacts and well-preserved bones. The artifacts included large potsherds, pipestem and pipe bowl fragments, fragments of glass wine and case bottles, and several badly rusted iron objects, including a stirrup. The ceramics included the pieces of several scratch-blue decorated, white salt-glazed stoneware tea bowls and saucers that appeared to be nearly complete and a Wedgwood-Whieldon green-glazed teapot. We found no creamware, which was invented in 1762 and became very common after 1770, and most of the artifacts seemed to date to the 1740s and 1750s. We found one coin, a 1757 George II penny. The coin was not very worn and probably had not circulated for many years before it was deposited in the cellar. It thus confirms the date arrived at from the other objects for the abandonment of the site, around 1760. The bones recovered from the feature included fish scales and small fish bones. This trash deposit was not present toward the northern end of the cellar.

After we had dug trenches across the cellar from north to south and east to west, we decided that digging more of Stratum A by hand would be a waste of time. This soil was so similar to the plowzone that it could not tell us much about the site that we did not already know. So we brought our backhoe operator back out to the site to remove the rest of this soil. What would have taken us a week to do by hand, he did in three hours. Then the rest of the cellar fill, including the artifact-rich Stratum C, was excavated by hand.

Within the cellar we found very little information about how the house was built. Only four bricks that appeared to be in place were found, one near the northwest corner and three near the southeast corner. These few bricks do seem to show, however, that the house had brick foundations. Not enough brick was present to

have built a whole house, so the upper stories must have been either log or frame. Since the foundations were brick, the fieldstone that we also found was most likely part of the chimney, which was probably either entirely stone or stone up to the shoulder (the point where the chimney narrows). Little window glass was found, and rather few nails. Large amounts of burned daub were present in Strata B and C. The small amount of window glass recovered may mean either that the house had few glass windows, or that they were carefully removed for reuse. The modest number of nails recovered presents a similar problem; the small number suggests a log house, but the nails may have been reclaimed for reuse, so a frame house is still possible. It is even possible that the entire house was moved from this location. There is no evidence that the house burned, or any other ready explanation for its complete abandonment, and fewer structural artifacts were found than one would expect in the cellar of such a house.

A scattering of Native American artifacts was present throughout the cellar fill. Three stone spearpoints or knives came out of the fill; one of them was a beautifully manufactured triangular spearpoint, probably made between AD 600 and 1300, and another was a "fishtail" point dating to around 1000 BC. We also found several prehistoric potsherds, some of which were tempered with steatite and date to between 1000 and 700 BC, a piece of an Indian clay tobacco pipe, and more than 200 stone flakes.

b. Feature 17, Possible Builder's Ramp

At the southern end of the cellar was a projection that was interpreted, when it was first uncovered, as a bulkhead entrance to the cellar (see Figure 35). (A bulkhead entrance gives access to a cellar from outside the house.) However, the fill in this extension was distinct from that seen in the remainder of the cellar. It consisted of mixed, nearly sterile redeposited subsoil. To distinguish this fill from the quite different cellar fills, we called it Feature 17. When this fill was excavated, it was revealed that underneath it the subsoil sloped up smoothly from the bottom of the cellar. A possible explanation for this feature is that the builders of the cellar dug an external ramp to take wheelbarrows into and out of the cellar, and when they had finished construction they filled the ramp in with sterile soil. It is also possible that Feature 17 was a bulkhead entrance that was abandoned rather early in the site's history. If so, the steps must have been completely dismantled, leaving no trace, and the stairway filled in with sterile soil from some other excavation on the site.

c. Feature 28, Root Cellar

Feature 28 was a small circular pit in the floor of the cellar (see Figures 34 and 35). It was 21 inches in diameter and 17 inches deep. The bottom of the pit was lined with oyster shell. The shell was presumably intended to provide drainage, suggesting that the pit was a storage cellar for roots. The fill in the hole consisted of brown silt loam that appeared to have washed into the hole. Several historic artifacts were recovered, including a stirrup and several pieces of bone.

d. The Mahoe/Wallace House

The house at Augustine Creek South seems to have been built quite well by the standards of its time. It had a full basement, which was rare, and brick foundations. It had glass windows and one stone and brick chimney. It measured about 16 by 25 feet, which seems to have been average. It probably had only one room on the first floor, with sleeping lofts above. Someone else seems to have appreciated its value, since, when the site was abandoned, the house was very possibly jacked off its foundations and moved. The men who moved the house would have used beams or logs to pry the wall sills up from the bricks beneath them, and then put other logs under the house as rollers. A team of horses or oxen would have been hooked up to one end of the house. As the animals pulled, men would have picked up the roller logs as they came out the back end of the house and carried them around to the front. It might have taken four or five men all day to make the move, but this was less time than it would have taken to build a new house from scratch. Moving a house was a

common practice in the days before electric and phone lines blocked the roads, and many old houses in Delaware have been moved once or even twice. When the men had moved the Mahoe/Wallace house, they would have come back and "robbed" the bricks out of the foundation, taking almost every one. They no doubt threw the broken bricks into the old cellar hole, along with whatever trash was lying around, and the house then started a new life in a new place.

3. The Augustine Creek North Site

The only historic feature excavated on the Augustine Creek North Site, other than the fence postholes, was the small cellar designated Feature 1 (Figures 36a and 36b). This cellar was found in one of the backhoe trenches, near the exact center of the site. It first appeared as a dark, ashy stain, extending beyond the trench both to the north and south. We therefore dug some more by hand to fully expose the feature. We dug two formal test units, placed according to the site grid, one north and one south of the backhoe trench, and the soil from these units was screened. The rest of the plowzone soil was dug away without screening until the whole feature was visible. Fully exposed, the feature was revealed as a small cellar with a bulkhead entrance. The cellar measured approximately 10 by 6 feet, and the bulkhead entrance, on the north side, was 3.8 feet long and 3.3 feet wide. We excavated the eastern half of the cellar. It was approximately 3.3 feet deep. Before plowing occurred at the site the cellar must have been at least 4 feet deep, and more likely four and a half feet. If the floor of the house was raised even six inches off the ground, people would have been able to stand up in the cellar. What they would have done in such a small space is not quite clear. The cellar may have been just for storage, or it may have been used as a cooling vault for milk, like a small dairy.

Since there was no washed-in plowzone in the cellar, the cellar hole was probably intentionally filled in up to the surface. About 1,250 artifacts and animal bones were recovered from the eastern half of the feature. The bones in the cellar were well preserved and included a pig jaw, other large pig and cow bones, chicken bones, fish bones, and fish scales. All of the artifacts dated to before 1770. We found no creamware, pearlware, or cut nails. There was quite a bit of coarse red earthenware, delftware, and Westerwald stoneware, and there were two small buckles and one button. This cellar therefore seems to date to the earlier phase of the site's occupation, around 1750 to 1770. It must have been filled in when the site was abandoned for the first time. We do not know whether the later occupants, who lived on the site between 1790 and 1810, restored the old house or built an entirely new one.

The only other trace we found of the house or houses that once stood over the cellar were the numerous pieces of brick in the plowzone. Because few nails were found on the site, it seems likely that the house was built of logs, like most of the tenements mentioned in the Orphans' Court records. Very little window glass was found, so the house probably had no more than one or two windows. If there were two houses, the earlier one may have had no glass windows at all. The quantity of brick probably means that both houses had brick chimneys, since if either had had substantial brick foundations some trace of them should have been found in our backhoe trenches. The families that lived on the north bank of the creek probably called a small log building home.

D. HOUSING IN EIGHTEENTH-CENTURY DELAWARE

The evidence of the Orphans' Court records and archaeology both suggest that the average eighteenth-century Delawarean did not live in a very elaborate house. The houses were frame or log, and although most had brick chimneys and at least one glass window, they did not have many other amenities. Most were built on flimsy foundations and probably did not last more than a couple of decades. Most of the houses had two rooms on the ground floor. Most had some kind of small storage cellar, but only a few had a basement. Many of the houses may have had adjacent sheds or other small additions. Georgian architecture and the ideas that went with it were little in evidence. The building of better, more permanent houses, like the

rearranging of farms and the planting of flower gardens, did not get strongly underway until after 1800.

IV. THINGS

A. PEOPLE AND ARTIFACTS

One fact we have learned about our species from archaeology is that people accumulate things. We make, buy, trade for, or steal objects of every imaginable kind: tools, weapons, decorations, relics, mementos, repositories of spiritual power, communication devices, scientific instruments. We have things for sitting on, for cooking with, for giving as gifts; things just to look at, things for holding other things, and things for fixing other things. We endow objects with symbolic meanings, from red roses for love to the skull and crossbones flag for piracy. Wherever we live, we leave the earth covered with the things we have used up and thrown away. Archaeologists rarely have trouble identifying a site where people once lived.

North Americans of the late twentieth century have more possessions than anyone before in human history. We have filled our homes with such a quantity of objects—from electronic appliances to beanbag toys—that we sometimes have to buy bigger houses, or rent storage sheds, to find places for them all. But what about the people who lived in Delaware 250 years ago? How many things, and what kinds of things, did they have?

Archaeologists, of course, find only some of the things that people have used (Plate 15). Many objects are made of perishable materials such as wood, bone, cloth, or leather, and these survive in the ground only under very rare conditions. Some kinds of things, such as silver dishes, are too valuable to have been easily lost or thrown away, and we very rarely find them. Other objects were disposed of in ways that tend to hide them from archaeologists. Broken pewter dishes, for example, were almost always taken to a metalsmith for recycling, not tossed into the trash. In farming areas today one sees old wagons and other pieces of farm equipment rotting away at the edges of fields. This is probably also what happened to wagons and plows in the eighteenth century. We never find plows in ordinary trash deposits. Archaeology alone, therefore, can give us only a partial picture of material life in the past. Fortunately, some kinds of written records can help us fill in the gaps. Written records tell us the names of things and explain how at least some of them were used, and they sometimes inform us about the symbolic importance of obscure objects, such as peace signs or

Liberty Bell tie pins. Documents are particularly useful for providing information about the expensive items that archaeologists rarely find, since silver plates, gold rings, and fancy clothes regularly attracted the attention of tax collectors and the writers of wills. Written records are less useful for the sorts of inexpensive, everyday items that people took for granted, such as crockery or pewter spoons, but these are just the items that archaeologists find most often. The combination of archaeology and written records can provide a better picture of the kinds of things eighteenth-century people kept in their homes than either of these two sources can provide alone.

B. STATUS AND MATERIAL GOODS

In general, rich people have more possessions than poor people. In fact, this is part of the definition of wealth in most societies, including ours. It is not always true, however, and the equating of great numbers of possessions with great wealth is an easy trap for archaeologists to fall into. Every society has "characters" who refuse to go along with the rules—for example, a millionaire who lives on a sailboat and stores all his or her belongings in a foot locker. In many societies there are also whole groups of people whose status is not accurately reflected in their possessions, such as monks and nuns in medieval Europe. Some professions, such as farming or metal working, require a large number of expensive tools, but they may not provide incomes as high as other professions, such as law or novel writing, that require few implements. The estate of a farmer with a large investment in land, livestock, barns, wagons, plows, harrows, and other tools would have been worth much more than that of a ship's captain whose only tools were a sextant and a spyglass, but this does not mean the farmer lived any more comfortably. Age is another variable. Young people tend to have fewer things than older people. They have had less time to accumulate possessions, and they often choose to spend their money differently than older people do. The excavators of one housing unit at Fort Independence in Boston, dating to the 1820s, found very few dishes or other household objects, and those they did find were not of good quality. They therefore identified the structure as a barracks for enlisted men. Further research showed, however, that this building was probably the quarters of unmarried officers (Clements 1993). These were young men who came from good families and had good salaries, but they had other priorities than to surround themselves with fine furniture and dishes.

Our attempt to understand the material lives of poor and ordinary people in Delaware must include a careful effort to understand what kinds of things they owned and why. Rather than assume that a site with many artifacts, or many pretty artifacts, represents wealth, while one with fewer artifacts represents poverty, we must investigate the relationship between status and individual choice using all the sources at our disposal. At Augustine Creek we have employed tax records, deeds, literary sources, analysis of the landscape, and comparison with other sites to provide a context for the objects we found.

C. PROBATE INVENTORIES

The best written records for information on the kinds of things that people owned are probate inventories. These documents were produced because of a quirk of the old English Common Law. When a man died without leaving a will, the inheritance of his movable possessions ("goods and chattels") was determined by ancient rules that set aside one-third of the goods for the widow during her life and otherwise divided them evenly among the children. To ensure that the estate was divided evenly, the goods had to be appraised. This task was usually performed by a group of two or three property-owning neighbors, "sufficient freeholders," in the language of the court, who went to the dead man's house and drew up a list of all the goods they found there. They also assigned values to these goods. Some of these lists are very detailed, enumerating each pot, bucket, shirt, chair, bed, and pig on the premises. The inventory of an ordinary farmer named John Allfree, made in 1780, is given in Table 9.

We should notice in the table that the appraisers' math is in error; the actual total of the numbers in the

columns is 137 pounds, 7 shillings, and 7 pence (there were usually 12 pence in a shilling and 20 shillings in a pound), and in two cases the numbers in the text do not add up to the column entry. This should remind us that the appraisers were, after all, just neighbors, not professionals. Some small household items we would expect to find in the inventory are missing, such as spoons and a razor.

Rather than imagine the Allfree family drinking their soup awkwardly out of their pewter basins, we should perhaps assume that these less valuable items were simply overlooked. The tradition of having neighbors make these inventories also seems to be telling us something important about this society. People assumed that there would not be anything in the house that a group of neighbors would not recognize and be able to value in at least an approximate way, that is, that everyone owned pretty much the same things.

Another striking feature of this inventory is the prominence of livestock and farming gear—what economists would call "capital goods." (Capital goods are business tools, things used to make money.) Allfree's livestock were valued at £81, 59 percent of his total worth. The value of his cows and horses, in particular, shows in the careful individual descriptions given of these animals: a red cow with white in her face, a young black mare. Allfree's plow, harrow, axes, and other farm and woodworking tools, along with a set of old cart wheels, were valued at £13 11 shillings. His wife's butter churn and spinning wheels were worth another pound. In total, the capital goods of this farm were valued at £96, 70 percent of the total value of the inventory. Another £27 was for the products of the farm, such as hay, shingles, and crops in the ground. Therefore, of Allfree's £137 estate, only £14, about 10 percent, was for household goods and furniture. Of course, if Allfree owned land, that was by far his most valuable possession, probably exceeding the total of all his other assets. For this farm family, investments in their farm had to come before spending on their personal comfort. As is usually the case, we do not know how old Allfree was—whether he was a young man and had yet to acquire much in the way of consumer goods, or an older man whose life had been a long struggle and had produced little surplus for spending on such items.

The Allfrees' house did not contain much furniture. The most valuable household items, as in almost all colonial inventories, were the beds. Larger households sometimes contained half a dozen beds, and those who were better off spent heavily on beds, steads, and "coverling." Note that a "bed" in the eighteenth century meant a mattress (a frame was called a "stead"), so the Allfrees' second bed was just a mattress on the floor. The other furniture in the house consisted of three old chests, two small tables, and two old chairs. Shelves for storage were probably attached to the walls, and there may have been stools or benches that the appraisers did not think worth valuing. These were the most common items of furniture in the period, although cupboards were also fairly common. Other kinds of furniture, such as couches and desks, were signs of above-average wealth. The high value of Allfree's "Great Coat," which was surely most of the £2 assigned to that coat and a pair of breeches, reminds us that very poor people must have had trouble keeping warm. Even some inventories of the better-off do not include such a garment, and we should probably imagine poor people going out on cold days wrapped in as many mismatched garments as they could fit over their bodies. The Allfrees' kitchen was provided with two iron cooking pots, a frying pan, a flesh fork (a large, two-tined iron fork for kitchen use), two earthenware pots, a jug, and two pitchers. Eating was done off the six pewter and three earthenware plates and from the two pewter basins. There were probably other inexpensive objects, such as spoons, table knives, wooden bowls, and ceramic mugs, that the appraisers overlooked. These were all very common items. This inventory, like most, does include some personal touches. Allfree's gun and bayonet suggest military service at some time in the past, perhaps during the Revolution.

Because hundreds of probate inventories survive from eighteenth-century Delaware, we can use them to make a statistical study of the kinds of things people owned. Such studies have been made for many parts of colonial America, and a great deal has been written about how to use these documents and what they tell us about the past (Carr and Walsh 1980, 1988, 1994; Jones 1980; Main 1988; Shammas 1982, 1989; Walsh 1992; Weatherill 1988). We must remember, however, that these lists contain many errors and some

systematic distortions, and their apparent precision should not fool us into accepting them at face value.

A study of probate inventories was an important part of the documentary research we undertook on the theme of the ordinary and the poor in eighteenth-century Delaware. One of the uses we have made of these documents is to estimate the standard of living of eighteenth-century people by calculating what percentage of them owned certain household items, such as bedsheets, cooking pots, books, and pewter dishes. Yet we must not trust too much in these numbers. We have already seen that appraisers might overlook small items of little monetary value. It is also possible that the estates of poor people were overlooked altogether, especially the estates of poor black people, which were just not worth enough to merit the attention of two neighboring property owners. Studies done in Connecticut seem to show that about 20 percent of households, primarily the poorest ones, were omitted from the inventory process (Main 1988). We also encounter many inventories of people who do not seem to have had independent households. The estate of James Glenn, inventoried in 1762, for example, consisted of his clothes, a gun, and a horse worth £20. Since £20 was a very high price for a horse, Glenn was clearly not a poor man, but a well-to-do young one who still lived with older relatives. If we were counting all inventories together, however, his would appear as a household too poor to own dishes, a table, a chair, or any other item. A strategy for excluding these non-households, developed by Carr and Walsh (1988), is to ignore every inventory that does not list a bed. We have used this method in our study. We know from other sources, however, that there were some poor people in eighteenth-century America who did not own beds (Smith 1988), so by excluding bed-less inventories we may be further reducing the number of truly poor people in our study.

Keeping these problems in mind, let us look at the inventories of eighteenth-century Delaware households to see what they can tell us. This study involved 200 inventories, all rural households from New Castle County. Our original plan was to study 50 inventories from each of four decades, the 1710s, the 1730s, the 1760s, and the 1790s. However, we discovered that there were fewer inventories for the early decades, so we expanded the first two categories to cover 1700-1729 and 1730-1749. We still did not find 50 inventories from the earliest period. After excluding people without beds, storekeepers, and residents of Wilmington (town dwellers owned different types of things than country people), we were left with 164 inventories. The data were recorded on a standardized form (shown in Appendix E). The form allows entries for the total value of the inventory, the value of the estate (which also included debts and financial obligations), and the number and kinds of furniture and animals on the property. Entries were also made to indicate the presence or absence of a select list of household articles. Twelve of these items were taken from the "amenities index" developed by Carr and Walsh (1988) from their work in the Chesapeake, which has included more than 2,000 inventories. This index was designed to include a range of subsistence, comfort, and luxury goods. The specific items from the amenities index that are included on our form are coarse earthenware, fine earthenware, bed or table linens, table knives, table forks, religious books, secular books, spices, pictures, clocks and watches, silver plate, and wigs. Use of these items in our study made our findings comparable, to some extent, with the very large body of data collected by Carr and Walsh. We were especially interested in craft activities, hoping to find out how many weavers, like Samuel Mahoe, and other small craftsmen there were in the county. We therefore inventoried looms, spinning wheels, and other types of tools. We also included on our form some items that are of particular interest to archaeologists, such as iron cooking pots, glassware, and equipment for preparing tea.

Tables 10 and 11 summarize some of the most important findings of our study. The values are adjusted for inflation, using tables from McCusker and Menard (1985), and the wealth categories are those used by Carr and Walsh (1988) and Gloria Main (1988). The values are based on the year 1765. Comparison of this material to the Chesapeake and New England data shows that fewer poor households were inventoried in Delaware. In the Chesapeake, £50 was about the average figure for a household's wealth, but in this Delaware sample £50 was well below the average.

A glance at these tables gives a rather grim picture of life among Delaware's poor. According to these inventories from the 1760s, nine in ten of the poorer households did not have earthenware dishes or a frying pan, eight in ten did not have a metal cooking pot, and nearly half did not have linen for their beds or pewter dishes to eat from. But the low number of households with earthenware sets off alarm bells for an archaeologist. We find sherds of earthenware on absolutely every eighteenth-century site we investigate, whether it is a mansion, farm, tenant's house, or slave quarter. Why then do so few inventories list earthenware? Again we come to the conclusion that the men who made the inventories listed only the things that had monetary value. Used crockery was not worth much. New milk pans and butter pots cost only a few pence, so old, cracked ones were not worth the appraisers' time. Similarly, chairs are a regular feature of the inventories, but few inventories list stools or benches; in the households without chairs, people probably sat on these, not on the floor. For earthenware, wooden stools, and other cheap things, the inventories are not a very useful guide (Bedell 2000).

More valuable things were more likely to attract the attention of the appraisers, and are probably listed more consistently. A good feather bed with a stead (frame) and a full set of sheets, blankets, and hangings cost as much as £5, so we can safely assume that most of the poorer people did not have them. Their unspecified bedclothes may have resembled those of John David, who slept with "an old rug and two old blankets" (NCC Probate Files, Reel 103). Since many of the inventories list only one bed, the children in these households probably slept on pallets made of straw or cattail rushes. About half of the poorer and middling households had pewter dishes; before the 1770s the rest probably ate from wooden bowls and trenchers (plates), which were so cheap that they were rarely itemized as anything but "wooden ware."

The inventories list a surprising number of books. A majority of households, including some of the poorest, owned at least one book, and many households owned several. We cannot tell just how many a particular household owned in most cases, because the entry usually says just "a parcel of books," but the inventories do portray a highly literate society, in which book ownership was common among ordinary people. In 1792 Jacob Jackson, a weaver whose estate was appraised at only £35, owned 19 books (NCC Probate Files, Reel 221). The inventory of John Montgomery's store in Wilmington, made in 1765, shows that he stocked Bibles in several sizes, Testaments, Catechisms, and spelling books (NCC Probate Files, Reel 305). Bibles, other religious texts, and spellers were probably the most common books, but a few of the inventories list books by title, and we can see that by the 1760s New Castle County intellectuals had access to a wide range of reading material. Dr. Robert Allison had more than 60 books, 22 dissertations, and 20 magazines. Most of Allison's books were medical tomes, but he also had histories of Britain, Rome, and America, several works of moral philosophy, and John Locke's *Essay on Government*, which had a great influence on the authors of the United States Constitution (NCC Probate Files, Reel 5). The champion bibliophile in the sample was the Reverend Morgan Edwards, who owned more than 120 books in English, Welsh, Latin, French, Greek, and Hebrew. Most of Edwards's books were Bibles, religious texts, grammars, or histories of the Baptist faith, but he also owned Virgil's *Aeneid*, Bunyan's *Pilgrim's Progress*, Plutarch's *Lives*, Milton's *Paradise Lost*, a history of New England, an edition of "Welsh Laws in Latin," and a number of his own sermons and pamphlets (NCC Probate Files, Reel 132).

While the inventories list similar objects from the beginning of the century to the end, they do show us a couple of interesting changes. Equipment for making and serving tea was not reported until the 1730s, but by the 1760s it was noted in half of middle-class households. Tea went from a rare luxury to a staple within a generation, and even some ordinary farmers, like William Gregg, whose estate was appraised at £99 in 1768, had a full tea service: "two Teapots, five Cups & Saucers, five teaspoons, a Cream pot" (NCC Probate Files, Reel 177). Clocks and watches were also not reported before the 1730s, but by the end of the century half of middle-class households and most wealthy ones had at least one timepiece (Figure 37). Clock time, even on the farm, was beginning to take over from the traditional daily rhythms of sunrise, noon, and sunset. Forks, which were rather rare early in the century, become common in the 1740s. Their prevalence in inventories

peaks in the 1760s, and then, mysteriously, declines in the 1790s. The decline is surely not due to any fall in the popularity of forks, but to a change in their status. Early in the century they were a new product that attracted attention, but by the 1790s they were ordinary objects like spoons and were more often overlooked.

The furniture in these Delaware houses was primarily simple and practical, and poor people did not have very much of it. Before 1790, less than half of poorer households had a table (meaning a table worth enough to inventory) or a chair. Those who did have chairs, however, tended to have several. About three-quarters of households had at least one chest, and some poor families had as many as four (the average was about two). Very few had desks, cupboards, dining tables, or couches. Few of the households had more than two beds, and many had only one. The amount of furniture did increase over the course of the century, but even in the 1790s the houses of poorer Delawareans contained only a bed or two, a table, a few chairs, and a couple of chests. At that time the ordinary farmers, people like the Mahoes and Wallaces, owned three or four beds, two or three tables, and two or three chests. Couches, desks, oval dining tables (a Renaissance fashion), and other pieces of better furniture were common only in the houses of the wealthy. Very few pictures or tapestries are mentioned, but this does not mean that the walls of most houses were completely bare: at the site of William Strickland's plantation, for example, archaeologists found an antlered deer skull with nail holes that showed it had once been mounted for display (Catts et al. 1995).

Table 12 shows some of the tools in New Castle County probate inventories. Spinning wheels were quite common, and many houses had more than one: "great and little wheels" is a common entry. Looms, however, were much less common, and since they were valued at from £3 to £5, the figure is probably fairly accurate. Most of the people who owned looms were probably professional weavers (Hood 1996). The inventories suggest that while spinning was a cottage industry practiced by farm wives in their spare time, weaving was not. The yarn for the "homespun" cloth found in many inventories could have been spun at home, but it was probably sent out to men like Samuel Mahoe to be woven. Interestingly, looms were somewhat more common in poorer households than in better-off or wealthy homes, suggesting that weavers were not usually well-to-do people. Blacksmiths' tools were also rare. In contrast to looms, they were most often found in the households of the rich, and since it seems unlikely that these well-off farmers were blacksmiths themselves, some of Delaware's blacksmiths may have been slaves. Carpenters' tools became rarer as the 1700s wore on. Two causes for this change suggest themselves. Perhaps the change simply represents a difference in the way the inventories were made; that is, things that had earlier been identified as "carpenters' tools" were later itemized simply as saws and axes. Or, it may be that in the pioneering days, early in the century, every man cut down his own trees and built his own house and sheds, while later on farmers came to employ specialists for such work.

The low counts of dairy items in the inventories are probably misleading. Earthenware milk pans have been identified on all eighteenth-century sites excavated in Delaware to date, suggesting that dairying on at least a small scale was nearly universal. The inventories also tell us that almost all middle-class households and a majority of poorer households kept cattle. The main inventory item counted as "dairy" was the butter churn, and these either were not used in all households that kept cows or simply were not worth enough to be counted consistently. Wagons and carriages became more common later in the century, a change which may be related to the improvements in roads and the increase in inland commerce. It does some damage to our notion of eighteenth-century Americans as rough frontiersmen to note that less than half of poor and ordinary households owned a gun.

D. ARCHAEOLOGY AT AUGUSTINE CREEK NORTH

1. The Artifacts

Eighteenth-century life looks quite different archaeologically than it does when viewed from the probate

inventories. The inventories emphasize furniture, animals, farm equipment, and luxury goods. Digging in the ground, we find bricks, nails, potsherds, fragments of glass, and bones. Piecing these two kinds of information into a coherent image of the past is challenging but also rewarding, because by themselves neither source gives an accurate picture.

During the excavation of the tenant farm at the Augustine Creek North Site, the archaeologists found more than 5,100 artifacts dating roughly to the period 1750 to 1810. (All of these artifacts, along with the field notes and other materials from these excavations, will be deposited at the Delaware State Museum.) Of these, 2,219 were small pieces of brick that were counted and then left in the field, and a few of the others were modern trash and unidentifiable junk. The objects we brought back to the laboratory are summarized in Table 13. Most of the historic artifacts came from the plowzone. The best preserved artifacts were found in the small cellar (Feature 1), where they had been protected from the damage caused by plowing. The cellar was filled in before 1770, so all of the artifacts dating to later decades come from the plowzone. We have no well-preserved deposits dating to the later part of the site's history.

Our ideas about when the site was occupied come primarily from the ceramics. During the second half of the eighteenth century ceramics changed very rapidly, and we can often identify the decade when a particular piece of pottery was made. Archaeologists count these artifacts in two ways. Sometimes we use a raw count of the sherds as we find them in the ground, divided according to the kind of ceramic or "ware" that each piece is made of. Table 13 shows the sherds we found at the Augustine Creek North Site.

The most common variety found was coarse red earthenware, which was used to make utilitarian vessels such as jars, pots, and milk pans. These vessels were cheap, and they were very common in all households in the region. The ownership and use of coarse earthenware vessels was therefore something that the tenants at Augustine Creek North shared with all their neighbors, rich and poor. The tenants also owned some pans or dishes made of coarse earthenwares decorated with a clay slip, a more decorative but still inexpensive choice that was becoming a speciality of potters in the Delaware Valley. Coarse earthenwares are not very useful for dating archaeological sites, because they were used throughout the colonial period and into the nineteenth century. Other kinds of ceramics, however, changed much more rapidly, and they can tell us when the site was occupied.

The striking characteristic about the collection of ceramics from this small site, from this perspective, is the wide range of dates represented. The collection includes some types that were not made after 1750, and others that were not made until the 1790s. (The single sherd of yellowware, of a kind not made until 1812, was very small and may not ever have belonged to the tenants who lived at the site. Such small artifacts can be dragged considerable distances across plowed fields.) Some types of ceramics absent from this list are also important for the dating. Some types common before 1750, such as Staffordshire dot and comb slipware, were not found, which suggests that the site was not occupied early in the century. We also did not find certain kinds common after 1820, especially those referred to by archaeologists as "whiteware," so we think the site had been abandoned by then. The sherds from the plowzone do not provide any evidence of a break in the occupation, since sherds are present that could have been made in all periods between 1740 and 1810. However, they also do not rule out a break.

The sherds from Feature 1, the small cellar, could all have been made before 1750; in fact, the mean ceramic date for the feature, a sort of average of the date ranges of all the datable sherds, is 1732. (The mean ceramic date for the site as a whole is 1769.) This very early date raises the possibility that the site may have been occupied for longer than we had thought, perhaps from as early as the 1720s. However, other pieces of evidence argue against such an early date. The small size of the site still makes a 90-year-long occupation unlikely. The houses these tenants lived in were probably ill-made log structures that did not last more than 20 or 30 years. That people should have built two of them in the unfavorable location of the Augustine Creek

North Site seems unlikely enough, but that they built four of five on this spot would seem incredible. The sample from the cellar is small and contains no tightly dated wares; all of the sherds could have been made in the 1740s or later. Taking all these things into account, we still think that the cellar hole dates to the middle of the century, although we cannot rule out an earlier date.

Why was the cellar hole filled in? It is always tempting to equate archaeological events, such as the abandonment and filling of a cellar hole, with events in the history of the site. If the site was abandoned for a while, it might seem obvious that the cellar hole would have been filled in at the time the site was first abandoned. But when a site is abandoned, open cellars tend to fill in, at least in part, with soil naturally washed in by the rain (as at Augustine Creek South). The cellar at Augustine Creek North was filled intentionally, apparently with garbage. The presence of this trash implies that someone was around to generate it, and that, therefore, the cellar was filled in while the site was still occupied. We have a hunch that the cellar may have been filled in not long after it was built. The bottom was distinctly damp when we dug into it, and during heavy rains it may have filled up with water. The people who dug the cellar apparently did not take sufficient stock of their environment, especially the high water table. If we are right about this, then the cellar was an experiment that failed, and was rather quickly turned into a trash pit.

2. Pots

The most common artifacts in the collection, other than brick fragments, were the pieces of broken ceramic dishes and pots. Archaeologists find these artifacts very useful for several reasons. Besides their importance for dating sites, which has just been discussed, they are also very sensitive indicators of cultural change, and can help us learn more about what people ate and drank and how they prepared it. The potsherds from the site (Table 14) include several types that one might not expect to find at the home of a poor tenant. Oriental porcelain was rather expensive, and is sometimes taken to be a sign of higher status, but 24 sherds were found at the Augustine Creek North Site. The tenants owned other decorated dishes, including scratch-blue stoneware, handpainted creamware and pearlware, and the incised blue and gray German stonewares known as "Westerwald." The investment in these decorated dishes shows that the tenants, though poor, had enough resources to think beyond simple survival. Where they could afford to, they tried to add a little beauty and fashion to their lives. Decorated dishes were a luxury that many people could afford to indulge in.

Raw counts of potsherds can tell us many things, but by themselves they tell us very little about how many different pots the people we are studying owned, or what kind. Archaeologists prefer to count ceramics in a different way, by figuring out the smallest number of different pots that could have produced the sherds we have found. This kind of counting is done by dividing the sherds into groups according to the ware type, color of glaze, shape of vessel, and so on, until each group contains only sherds that could have come from the same pot. The number of groups we end up with is called the "minimum number of vessels." This method works best with sherds from a well-defined archaeological context, such as the small cellar at Augustine Creek North. We have made a minimum number of vessels estimate for the potsherds from this cellar.

Table 15 shows the tablewares from the cellar—that is, the vessels used at the table for eating and drinking. Rather few dishes were actually identified. Most, eight out of 10, were mugs. Ceramic mugs, used for drinking cider and beer, were very common in the 1700s, and the tenants at Augustine Creek North obviously used them regularly. There was one bowl made of faience or delftware, a decorative ware, and a coarse earthenware porringer. A porringer was a small bowl with a handle that was held in the hand while the contents were eaten with a spoon. As the name implies, porringers were used for eating porridge (oatmeal, and similar substances), but they could also be used for soup or stew. They are rarely mentioned in the written records we have consulted from Delaware in this period, but they are very common archaeologically. Two important categories of dishes missing from the cellar are plates and "teawares," that is, teacups, saucers,

and other vessels used in the preparation and serving of tea. Ceramic plates were actually not very common before 1760, so their absence is not surprising. The tenants probably used either wooden or pewter plates; the inventories show that in the 1760s about half of poorer households had pewter plates. The absence of teawares, though not surprising, is an important discovery, because it argues that this poor household had not taken up the tea ceremony, which was introduced by the wealthy in the late 1600s but by 1750 was becoming common among the middle class.

Table 16 shows the other vessels from the cellar. The milk pan is rather important because it suggests that the tenants kept at least one cow (although one pan is hardly proof). "Multifunction" vessels were those used in both food preparation and food serving ("from the oven to the table," as the makers of Corningware used to claim). A "dish," four of which were identified in the feature, was wide and shallow, somewhere between a bowl and a plate; a "pan" was similar but larger and deeper. All of the vessels were decorated with a combination of slip trailing and incising ("sgraffito"), which would have made the table more festive. "Ointment pots" were used to hold a variety of things sold by apothecaries and druggists, and after their contents were used up they may have been put into service around the house as small bowls.

We excavated no features dating to the later stage of the occupation of the site, so the only evidence we had of the ceramics used by the later tenants were the small fragments from the plowzone. It is hard to make minimum number of vessel counts for a generalized scatter of small sherds like the plowzone collection, especially when they date to a period of at least 50 years. The results from such a study are also not very reliable, and most of the vessel forms cannot be identified anyway. Since we still wanted to know what kinds of pots and dishes the later tenants used, however, we took a close look at the sherds from the plowzone to see what kinds of ceramic vessels we could identify. Most of the sherds were too small to reveal anything about the vessels they came from, but we did have some success.

Among the plowzone sherds that dated to the earlier period, before 1770, we found evidence of at least five more mugs, so the earlier tenants were indeed well provided with those. We also found two kinds of vessels we did not find in Feature 1. Both of these were made of white salt-glazed stoneware. White salt-glazed stoneware was made until about 1805, but in North America it became rare after the introduction of cheaper substitutes in the 1760s. If the later tenant occupation did not start until after 1790, they probably did not buy any white salt-glazed stoneware. The two vessels identified, a teacup and a plate, therefore probably date to the earlier period, and they almost certainly date to before 1780. The single teacup raises the possibility that the tenants did, at some point, take up tea-drinking. Since we found only one sherd from one cup, they cannot have used tea very heavily or for very long; perhaps they began tea-drinking at the end of their occupation, just before moving to better lodgings somewhere else. Of course, we only excavated one percent of the plowzone on the site, but that was enough to identify five early mugs and pieces of later teacups. If the earlier tenants used tea regularly, we ought to have found more teacups.

Some of the sherds in the plowzone were from coarse earthenware vessels that could have been used at any time during the site's occupation. These included two porringers, a mug, a jar, a jug, four milk pans, at least two dishes, and a pan. The number of milk pans reinforces the impression that the residents kept cows at some point. Since we cannot date the milk pans, however, we do not know if it was only for a brief time or continued throughout the occupation. Sherds of oriental porcelain, which included a teacup and a saucer, could also have come from either period.

In the 1760s and 1770s a major revolution took place in ceramic manufacture. English potters, led by Josiah Wedgwood, developed new kinds of refined earthenwares that were nearly as elegant as porcelain or fine stoneware but could be made much more cheaply. After a series of encouraging experiments, Wedgwood had a huge success with what we now call creamware, introduced in 1762. Creamware is very pale yellow or dark cream-colored, with a very hard, clear glaze. Dishes made from creamware were so tough, versatile, and

inexpensive that they quickly spread across Europe and all the European colonies, and by the 1770s they are in evidence on almost all sites in the Middle Atlantic region. The first really successful ceramic plates were made of creamware, and they soon began to displace the more expensive pewter. Creamware was also used to make teawares, including elaborately molded forms. Other improvements soon followed, including new kinds of decoration and, in 1775, another new ware, which we call pearlware. Pearlware was white with a faint bluish tinge, resembling oriental porcelain, and it became the most common refined ware in the 1790 to 1820 period.

Seven sherds of creamware plates were identified in the plowzone at the Augustine Creek North Site. One piece of a pearlware plate with a green feather edge was also found. None of the handpainted pearlware sherds could actually be assigned to a vessel type, but around 1800 this kind of decoration was almost always found on teawares. Two sherds almost certainly came from teapots, and the others probably came from cups and saucers. By about 1810, when the site was abandoned, the tenants were certainly brewing tea in decorated pots and drinking it from decorated cups, suggesting that they were trying to take on whatever bits of stylish gentility they could afford.

3. Other Artifacts

Brick, ceramics, and bone made up most of the artifacts found on the site, but we also found other objects. The 154 fragments of household glass from the site included several interesting items. Eight fragments came from glass drinking vessels, mostly stemmed glasses (like modern wine glasses). Two small pieces were decorated. One showed a piece of a wheel-etched abstract design, and one was painted with what appeared to be part of a woman's dress. These tiny pieces of decorated glass, and the other fragments of stemmed glasses, reinforce the impression that the tenants brightened their lives with the luxuries they could afford. Two small sherds came from glass vials that may have held patent medicine. Most of the other glass pieces came from dark green wine bottles.

A variety of other small objects were also found. The 111 pieces of white clay tobacco pipes made up nearly 6 percent of the total artifacts, a rather high total for Delaware and more like the pattern one sees on sites in the Chesapeake Bay region (Bedell et al. 1998). Other objects include sewing needles, lead shot, buckles, buttons, and a single cuff link, which suggests that at least one of the male occupants could dress up when the occasion demanded. No metal tools were found. The lack of tools could be just a reflection of the small size of the artifact sample, but inventories suggest that poor people may have been much less well equipped than their better-off neighbors, and the tenants simply may not have owned many tools.

4. Bones

During the excavations we found 874 fragments of animal bone, all from Feature 1. (Bone is too soft to survive many plowings.) This raw count is not a very useful measure of how many bones were thrown away, though, because a bone that broke into more pieces would be counted as more than one that stayed together. We therefore prefer to use a number called the "minimum number of units," an estimate of how many bones (that is, cow femurs or pig's knuckles) produced the fragments we have found. The minimum number of units count was 219. Table 17 shows the bones from Feature 1. We can tell the age of animals from their jaws and teeth, and we can use this information to determine how many animals, at a minimum, produced these bones. The bones in Feature 1 came from at least two cows and at least four pigs, but all of the sheep bone could have come from a single animal.

Since we found only 219 bones on the site, our conclusions must be very tentative. These bones might have come from just one week's meals, or a month's, or they may be just the bones that were thrown away in one corner of the yard. The total numbers therefore mean little. The proportions of the different animals,

however, may be telling us more. We can see that most of the meat the tenants ate was beef, pork, and mutton (sheep). They probably raised cattle and pigs, but since the sheep bones may have come from a single animal, we cannot say whether it was raised or bought. They probably had chickens in the yard, since we found eggshell fragments as well as chicken bones. We see some evidence of hunting and fishing, but not enough to have had a big impact on the diet (the 65 fish bones were all scales and other small remains, so they do not represent much meat).

E. ARCHAEOLOGY AT AUGUSTINE CREEK SOUTH

1. The Artifacts

The first excavations at the Augustine Creek South Site gave little hint of the great number of artifacts we would eventually find on the site. The plowzone on the site contained only about 30 artifacts per 1x1-meter square, much less than what we were finding across the creek on the north side and less than a quarter of what we have found on some other sites (Bedell et al. 1998; Bedell and Luccketti 1988). We were not at all impressed by this collection, and since we had found no features we were almost ready to move on and let the site be bulldozed. But as it turned out, we simply were not looking hard enough. When we found the Mahoes' cellar hole in one of our backhoe trenches, we discovered whole layers made up mostly of artifacts and bones.

he artifacts in the plowzone were not, in this case, a reliable guide to the riches of the site. We can suggest a few reasons why they were not. Artifacts tend to accumulate on the surface of a site over time, and the Mahoe/Wallace farm was occupied for only about 35 years. The farm was also located right next to a steep bluff leading down to the swamps along Augustine Creek. Recent residents of the area have dumped tons of trash down that slope, everything from cans and bottles to refrigerators and a shopping cart. While we were digging on the site we kept casting covetous eyes toward the slope, thinking that under all that modern garbage might be a terrific lode of 250-year-old garbage. Alas, the slope will not be disturbed during the construction of the wetland on the site, so it was outside our project area. Too much digging would cause erosion on the slope, and at its bottom, where we might expect the oldest deposits to be, was a protected wetland where our excavations would not be welcome. We did eventually dig a few careful holes on the slope with a shovel, but they turned up only more cans and bottles, and we had to give up on that idea. But many of the kinds of artifacts that turn up in the plowzone on most sites might, at Augustine Creek, be buried under modern trash on the slopes leading down to the swamp.

Of the 7,334 artifacts we found at the site, about 4,928 were from the cellar hole. The remarkable deposit from this feature can tell us many things about life in the eighteenth century. However, the evidence, reviewed below, shows that the cellar was filled in at the very end of the occupation of the site and contained mostly artifacts dating to the 1750s. In this period we believe that the site was occupied by Henrietta Mahoe, her young apprentice, John Harding, and, after 1755, her second husband, Thomas Wallace. We do not have many artifacts that we can securely date to the lifetime of Samuel Mahoe.

2. Pots

Large amounts of pottery were found in both Feature 1, the cellar, and Feature 11, the shallow pit or trash midden southeast of the house. Minimum number of vessel counts were made for both of these features. In the cellar, we counted 261 different vessels and identified the type and function of 233 of them. In the midden, we counted 48 vessels and identified 35 of them. The site therefore gives an excellent sample of the ceramics used on one ordinary farm.

The cellar seems to have been filled in when the site was abandoned, and the ceramics in the cellar fill allow

us to date that abandonment rather precisely. The deposit contains none of the perfected creamwares Josiah Wedgwood introduced in 1762. However, we did find pieces of some of Wedgwood's experimental wares. We found pieces of greenish creamware in the "melon" pattern, introduced in about 1750, and an early creamware teapot molded and colored to look like a cauliflower, a design brought out in about 1759. The site should, therefore, have been abandoned around 1760, and no later than 1770.

The cellar does not contain trash that was dumped directly from the kitchen or from the table to the open hole. The site was in the process of abandonment when the house was moved or torn down and the bricks were salvaged, so no one was living there to generate all that trash. This material has been redeposited. It must have been lying around the site in piles, or in barrels. When the site was being cleared some of the trash was moved to the cellar. The ceramics help us see that this was so. In a trash deposit that has come straight from the table, we find a large percentage of complete or nearly complete vessels; these are objects that fell to the floor and broke, and then someone swept up the pieces and tossed them out. But in Feature 1, most of the vessels were less than 10 percent complete. This kind of fragmentation results from moving the trash around.

The objects in the cellar may, therefore, have been thrown away over an extended period of time, perhaps as much as several decades. The feature does contain artifacts from a long time span. However, the large amount of white salt-glazed stoneware with scratch-blue decoration (post-1744) and the presence of early creamwares and faience (delftware) with decorations introduced in 1750 suggest that the bulk of the material dates to the 1745 to 1760 period, that is, primarily to the time after Samuel Mahoe had died.

Table 18 shows the tablewares and teawares from the cellar. The 77 teaware vessels, most of them decorated, show that drinking tea was a regular part of life in the Mahoe/Wallace household. In this period tea was usually drunk in a somewhat ritualized act called the "tea ceremony," in imitation of European and, ultimately, Chinese aristocrats. Drinking tea was, therefore, something more than a way to quench one's thirst. It suggested aspirations to refinement and gentility, and the speed with which it spread through both European and American society shows how widespread those aspirations were. The Mahoes and Wallaces, ordinary people not far from the frontier, had at least the minimum equipment they needed for this ceremony—teapots, cups, and saucers—and they probably had teaspoons and a cream pitcher as well.

The decorated vessels we found at Augustine Creek South were largely white salt-glazed stoneware with scratch-blue decorations (Plate 16). Although not strictly a set, these dishes were all of a common pattern, and they would have matched well on the table. One vessel that would not have matched is the cauliflower-shaped teapot, but its unusual and elaborate design may, in Henrietta's eyes, have made up for its oddness (Plate 17). Some Chinese porcelain was also found. The Wallace tea set would have been quite nice, and we can imagine Henrietta proudly serving the neighbors with these dishes. However, tea was not the only drink served in the household; the 27 mugs shows us that they were still drinking plenty of cider and beer. One of the decorated faience or delftware bowls found at the site (Plate 18) is probably a punch bowl. Punch was another new, stylish drink, and bowls like this one were used to serve it up at parties. Only six plates were identified, and these were made of faience, a type of ceramic ware that does not hold up well under extended use at the table, so the household probably ate off pewter most of the time. The large numbers of bowls and porringers show us that the Wallaces were eating quite a lot of porridge and soup; these vessels, in traditional earthenware forms, provide a counterpoint to the newfangled teawares (Janowitz and Affleck 1998). Some aspects of eating and drinking were changing, but others remained highly traditional.

As Table 19 shows, numerous other vessels were also found in the cellar. The eight milk pans indicate active dairying. The large numbers of storage jars, dishes, pans, and jugs speak of a well-appointed kitchen. One of the redware dishes was decorated with a written slogan (Plate 19), but unfortunately we have not been able to figure out what it said. Messages were common on dishes made in the Delaware Valley. Fragments of at least three chamber pots were also found. These objects are rarely mentioned in inventories, which has led

some historians to suggest that chamber pots were uncommon (Carr and Walsh 1994:133), but they have been found on most eighteenth-century archaeological sites in the Delaware Valley and Chesapeake Bay regions.

The collection from Feature 11, the midden, is smaller than the cellar collection but otherwise similar (Tables 20 and 21). Twelve more milk pans further confirm the presence of an active dairy. One of the slipware bowls from the feature had a distinctive foot-ring shape known as the "Philadelphia foot," which shows that either the residents were getting some of their dishes from the Philadelphia region or the local potters were under the influence of Philadelphia craftsmen. At least one of the bowls from Feature 1 had the same foot-ring shape, and five other unidentified vessels were probably of the same type. On the whole, the collection resembles others from the Delaware Valley, which are rather different from the collections from sites in the Chesapeake Bay region (Bedell et al. 1998). The red-bodied slipware saucer is very unusual, since the potters who made coarse earthenware usually concentrated on larger forms. It may represent an attempt by some local potter to extend his range. One of the unidentified vessels is probably a chamber pot.

3. Clothing and Status

The Augustine Creek South Site produced a large and interesting collection of "small finds," little objects made neither of ceramic nor glass (Table 22). In particular, a large number of buttons and buckles were found that give us some hint of how the site's residents dressed. Most people spent much more on clothing than on ceramics, and clothes would also be seen by a wider circle of neighbors, acquaintances, and strangers. The hints about dress that we can pick up from the surviving hard parts may therefore tell us important things about the world in which the Mahoes and Wallaces lived, and about how they wished to be seen in that world.

Buttons have a practical function, but their purpose has always been as much to ornament the wearer as to fasten his or her clothes. (To this day, some Amish and Mennonite groups consider buttons a violation of "plain" dressing.) The buttons from eighteenth-century farm sites clearly show their ornamental function. The most common type in the mid-1700s was the hollow brass button, which had been introduced in the 1500s (Noël Hume 1970:88). These shiny objects were displayed in rows along men's coats, waistcoats, and breeches. The effect was enhanced by gilding, that is, covering the brass button with a thin layer of gold. By 1750 British metal workers could make the gold layer very thin indeed; gilt buttons were thus not particularly expensive, but they were more costly than brass specimens and were certainly a purely ornamental refinement. The Augustine Creek South Site yielded 11 plain brass buttons and five gilt buttons. Pewter buttons, which were less expensive than brass but still nice enough to be used on gentlemen's clothing, were also found.

Some of the buttons we found had either a wire link connecting two pieces together or a shank that was worn or broken by the friction of the wire link (Plate 20). These were sleeve buttons or cuff links (Noël Hume 1970:380). Some of the examples from Augustine Creek South were constructed of a copper or brass back with an inlaid glass or paste stone. Paste, or "strass," is a form of faux gemstone invented around 1734 in France, which inexpensively simulated the look of colored precious and semiprecious stones (Albert and Kent 1949:4). Buttons made of paste were almost always ornamental and were used to link the ruffled cuffs of a man's shirt or the multiple buttonholed, folded boot-sleeves of coats and waistcoats (Warwick et al. 1965:154-156). The delicate structure of the diminutive paste sleeve buttons suggests their usage as a decorative fastener—aesthetically pleasing, but functionally impractical—as opposed to ones sturdily constructed and intended to withstand the rigors of farming. These high-fashion paste sleeve buttons, along with the gilt and pewter coat buttons and the other sleeve buttons, seem to be telling us something quite interesting about the residents of these sites. Although they were not wealthy and did not spend heavily on household goods, they dressed well and were willing to spend money to have some of the latest fashions.

Shoe buckles reinforce the impression given by the buttons and cuff links (Plate 21). During the eighteenth

century, the shoe buckle was another part of dress whose function was clearly overshadowed by its decorative purpose. The shoe buckles worn by the wealthy were usually made from gold or silver, sometimes inlaid with precious stones. Buckles worn by the masses were made from a variety of materials, including brass, copper, jet, pinchbeck, steel, gun-metal, and, in some instances, wood. Occasionally, they would be inlaid with paste or glass stones (Moore 1933).

In all, nine shoe buckles were found at the two sites: eight at Augustine Creek South, and one at Augustine Creek North. These buckles were all brass or copper, with incised or molded designs for decoration. Neither frames capable of accommodating inlaid stones, either real or paste, nor any inscriptions were found among the identified fragments. Shoe buckles of the sort recovered from these sites were understandably less expensive than those with inlaid stones or those made from gold or silver. Nevertheless, shoe buckles made from less desirable metals and set with paste stones were still considered valuable enough to be listed in wills, or advertised in newspapers as stolen items (Abbitt 1973:26). These shoe buckles reinforce the impression given by the cuff links and other buttons that someone on these sites liked to dress fashionably.

It might seem, at first glance, that there was a contradiction between this evidence of stylish dressing and the old-fashioned house and trash-strewn yard at Augustine Creek South. Yet, taken together with the teacups and the other evidence of up-to-date dining habits, the fine clothes may be sending an important message. Clothes, after all, are instruments of communication just as much as they are protection from the weather, and the same can sometimes be said of dishes and forks (Wobst 1977). The Mahoes' teacups and gilt buttons may have been intended to show that their small house and rough-hewn farm did not define them or limit their aspirations. They were not backwoods bumpkins, but people of the world who knew about fashion and the finer things. Their lives on the frontier might have been hard, but their spirits had not been crushed. To the aristocrats whose fashions they copied, they may have been saying, "I'm as good a man (or woman) as you."

4. Other Artifacts

One of the most interesting artifacts found on the site was a small brass disk, about 1½ inches across, with a small triangular hole in its center. When the disk was cleaned off, we could see that roman numerals were arranged around the rim (Plate 22). The disk was part of a small sundial. The hole in the center was for a triangular post that cast the shadow. We already knew that the yard of the Mahoe farm was rather a mess, with trash on the surface and pits full of ash and bone scattered about. Where would the sundial have been placed? What purpose did it serve? Was it purely decorative, or did Samuel Mahoe (or Henrietta, or Thomas Wallace) check it to find out when it was time to eat lunch or go to church? If it was a decoration, was some small part of the yard set aside for it? One can imagine a small square of bushes with the sundial placed in the center, like one of the small formal gardens at Colonial Williamsburg. But those gardens are not historically accurate; the real gardens of eighteenth-century Williamsburg were probably much rougher and more practical (Brown and Samford 1990). In any case, such an arrangement seems impossible at Augustine Creek South, in the midst of the ashy pits. Artifacts like this one, which seem to contradict our overall impressions of a site, are actually common. Archaeology teaches us to beware of expecting consistency from people who lived in the past any more than we expect it from our contemporaries.

Two claw hammers and pieces of two other iron tools were found on the site. Other small objects found were two knives, a fork, a glass bead, two pieces of bone combs, two thimbles, and 54 straight pins (see Table 22). We also found several fragments of stemmed glass vessels—another small luxury—and one clay marble. Toys are rarely mentioned in inventories, but clay marbles are common archaeological finds, and they remind us of some of the universals in human life. All children play, and the toys that enriched their lives may have been things that escaped the notice of adults interested in the monetary value of the estate: marbles, corncob dolls, wooden guns, fishing poles, and who knows what other things the children may have picked up from around the farm.

4. Bones and Food

A total of 4,254 animal bones and bone fragments were found at the Augustine Creek South Site. This number represents at least 1,199 bones (Table 23 and Appendix D). However, this number also includes 618 fish scales and small, unidentifiable fish bones, and if we subtract these, only 581 bones remain. As on the north side of the creek most of the identifiable bones, and almost all of the meat bones, were from cattle, pigs, and sheep. At least four cattle, three pigs, and two sheep were represented. The number of sheep bones found at both of the Augustine Creek sites, while not large, is still unusually high when compared to other sites that have been excavated in Delaware (Bedell et al. 1998; Catts et al. 1995; De Cunzo et al. 1992; Grettler et al. 1995). The Mahoes and Wallaces must have been raising sheep to provide the weaving shed with wool, and also using some of them for food (Plate 23). Perhaps they even sold a few sheep, or some mutton, to the tenants across the creek. Still, even for this weaver's family, cattle provided most of the meat. They also raised chickens and kept dogs and cats.

A careful study of the cattle and pig bones shows that many parts of these animals are missing, especially the skulls. If the animals were slaughtered next to the house, we would expect to find complete skeletons, so the slaughtering may have been done some distance away.

The wild animals eaten on the farm were all small ones. Bones of rabbit, squirrel, pigeon, turtle, and frog were found, along with shad, catfish, and striped bass. These fish could not have come from Augustine Creek. They may have been bought, or someone may have walked a few miles to the Appoquinimink or Delaware River to fish. The only evidence of plant food we found on the site were a few kernels of corn and wheat that turned up in the soil flotation.

The evidence of the bones from these sites matches well with the evidence from Delaware probate inventories. Cows and pigs are also very prominent in the inventories, and sheep are fairly common. The written records, both probate inventories and the Orphans' Court records described in Chapters II and III, also make it plain that these people were primarily grain farmers, raising wheat, corn, rye, and barley. The inventories also mention turnips, peas, beans, and, after 1750, potatoes. The Orphans' Court records describe orchards of apple and peach trees.

What did the Mahoes, the Wallaces, and people like them eat? Their primary crops were grains, and like their European ancestors they no doubt ate quite a lot of bread. The settlers in the Chesapeake, including the Marylanders who crossed the line and settled in Delaware, tended to eat a great deal of corn bread, but Delaware remained primarily a land of wheat bread. Bake ovens were not common, however, so much of the bread must have been baked in a pan or "Dutch oven" over the fire. The frying pans so common in inventories could be used as baking dishes in this way, or to prepare fried bread made of wheat or corn. Porringers—ceramic bowls used, among other things, for eating oatmeal or other kinds of porridge—are common on archaeological sites in Delaware, and they point to another way of using grain.

Travelers to America in the eighteenth and nineteenth centuries commented on how much meat the settlers ate, and archaeological evidence supports these observations (Walsh 1992). Cattle and pigs were very common. Chicken bones and eggshells are also found on almost every site, although chickens are rarely mentioned in written records. They were not worth enough to be counted in probate inventories, and were probably such a common part of the landscape that writers rarely bothered to say they were there. Beef, pork, and mutton were not sawed into small portions such as steaks or pork chops, but were cooked as large roasts or chopped into pieces for stews. All the meat on the animal was eaten, including the brain and the other organs, the intestines, the cow's tail, and the pig's feet. Any remaining scraps went to the dogs, and we often see their tooth marks on the bones from archaeological sites. How was meat preserved? Smokehouses were

quite common in the Orphans' Court records, and one sometimes sees barrels of pickled beef or salted meat in probate inventories, so all of these techniques were in use. But by no means did every farmer have a smokehouse, and probate listings of preserved foods are not common. Perhaps salted meat was not valuable or durable enough to be listed in the inventories. The simplest way of resolving the discrepancy between the large amounts of meat in the archaeological and literary records and the small amounts in the inventories is to assume that much of the meat was eaten fresh. The easiest way to preserve meat, after all, is to keep the animal alive. A steer yielded too much meat for even the biggest family, but the excess could be sold or shared with the neighbors through such an institution as a "meat club," a group of farm families who took turns slaughtering cattle (Henretta 1978).

Hunting and fishing also provided some meat. The wild animal bones from the Augustine Creek sites were mostly from small animals, and this is typical of the excavated sites in Delaware (Bedell et al. 1998; Catts et al. 1995; Grettler et al. 1995, 1996). Rabbit, squirrel, opossum, raccoon, and turtle bones are all common, and most of the fish were small types that could be caught with a hook and line in nearby streams. We have lost the habit of eating small birds, but eighteenth-century Europeans still delighted in blackbird pies and similar fare. Their relatives in Delaware seem to have hunted pigeons and other small birds, as well as ducks and turkeys. The only Delaware site that has yielded many deer remains is the John Powell Plantation, where bones of at least three deer (compared to four cattle) were found (Grettler et al. 1995:130). All of these wild animals were probably caught by the people who were to eat them, but there seems to have been a regular market in oysters. Oyster shells have been found at all of the eighteenth-century Delaware sites that have been excavated to date, including those far from tidal waters, like Augustine Creek North and South. Some salt-water fish may have been marketed as well.

Beyond the basics of bread, porridge, and meat, it is harder for us to tell what Delawareans were eating. Archaeologists find only occasional evidence of other plant foods. Blueberry and raspberry seeds were found in the well at the John Powell Plantation (Grettler et al. 1995:131). Beans, peach and cherry pits, and the seeds of blueberries, raspberries, and grapes were found at the Bloomsbury Site (Heite et al. 1998), and peach pits at the McKean/Cochran Farm (Bedell et al. 1998). Both wild and cultivated fruits were clearly enjoyed in season. The settlers probably grew most of the common European vegetables, but it is difficult for us to say what proportion of the diet was made up of foods like peas, beans, lettuce, onions, and carrots.

The main drinks were water, cider, and, after 1750, tea. The production of cider was the reason for all the apple orchards mentioned in the Orphans' Court records; the instructions to the assessors asked specifically about the condition of the orchards, which implies that an orchard was an expected part of the farm. Cider was drunk in mugs, which are very common archaeologically, both in plain and fancy forms. Mugs were found on both of the Augustine Creek sites. Beer was probably also common, although it is more difficult to document. The Mahoes and Wallaces, and tenants who lived at Augustine Creek North after 1790, all had equipment for serving tea. From the earlier period at Augustine Creek North we have only the single white salt-glazed stoneware teacup, which suggests that these people did drink some tea but did not consume it regularly.

F. ARCHAEOLOGY AND MATERIAL LIFE

The pictures of eighteenth-century material life we draw from the probate inventories are quite different from those we draw from archaeology. For poor people the contrast is particularly strong. Archaeological finds, especially finds of ceramics, usually make the lives of the people who used them look brighter than the short lists in the inventories. Like the tenants at the Augustine Creek North Site, many poor people throughout the British colonies used decorated dishes that cost a little more than the most basic available wares. These dishes were still not expensive, but they were not strictly necessary. Wooden dishes and leather flagons worked perfectly well. Does the low cost of these decorated dishes mean that they were not important?

Should we ignore them and concentrate on the valuable items listed in inventories, like beds and watches, that the poor so conspicuously lacked? Painted ceramic dishes and plates represent a small investment in beauty and refinement in a harsh world. They show us that poor country people cared about making their homes look nice, in ways that they could manage (Glassie 1982). They also show us that tenant farmers responded to the new industries of the eighteenth century and their wares, and took up new habits like drinking tea and coffee. They were not cut off from the new economy and the social changes that accompanied it. The presence of other small luxuries, like stemmed glass drinking vessels and cuff links, reinforces this impression.

Property-owning farmers like the Mahoes and the Wallaces participated much more fully in the new fashions coming from across the Atlantic. By the 1750s they had taken to tea enthusiastically, and the sites of their farms yield fragments of dozens of teacups and saucers, and sometimes fancy vessels such as the cauliflower-shaped teapot from Augustine Creek South. Other items also point to refined table manners, such as forks and pieces of stemmed glass drinking cups and etched tumblers. The gilt buttons and other clothing fragments show that these people tried to dress respectably, too. Their household goods presented a strong contrast to their houses and farms, which were still, by and large, shabby and highly traditional. Their diet, which relied heavily on bread, porridge, and stew, was also traditional. To some eighteenth-century critics, as well as some modern historians, these changes were all of a piece (Carson 1994). Improved housing and landscaped yards should have gone hand in hand with tea drinking and fork use. But the Mahoes, the Wallaces, and their neighbors did not see things this way. They chose to drink tea and buy the new dishes, but they kept on living in their log houses and feeding the chickens out the front door. They took what they wanted from the new cultural currents and ignored the rest.

V. NATIVE AMERICANS ON AUGUSTINE CREEK

A. TRACES OF THE DISTANT PAST

Traces of prehistoric Indians were found on both sides of Augustine Creek. Native Americans have lived in Delaware for at least 12,000 years, and they have long had the habit of camping along streams, rivers, and marshes. Therefore, it was hardly surprising to find evidence of their presence along Augustine Creek. The first signs that they had camped on the sites were stone flakes that turned up in our shovel test pits. These flakes are the waste material from making stone tools, and since a person making a single stone tool can produce hundreds of flakes, we find them wherever stone-age people lived. In a shovel test on the north side we also found a finished stone tool, a knife shaped like a rounded triangle, about 1½ inches (4 centimeters) long. We also recovered a few pieces of rock cracked in the way that rocks break when heated in fires. The presence of this "fire-cracked rock" suggests that people had built fires on the sites. Compared to the historic sites, the prehistoric sites were much larger but produced many fewer artifacts. On the south side we found prehistoric artifacts all over a hill that extended most of the way across the project right-of-way, an area of about two acres (Figure 38). To the east this hill overlooked Augustine Creek, and at the north end was a small pond created in recent years by damming a natural spring. Only the part of the site within the boundaries of the historic farm site was excavated, less than half of the total. On the north side the terrain was an even slope rising gradually to the north, with no clear topographic boundaries to the east or west. The site extended all the way across the right-of-way and beyond, but only about 100 feet up the slope from the edge of the wetlands.

Although we found Indian artifacts throughout these rather large areas, we did not find very many. On the north side we dug 42 1x1-meter test units in the plowzone, and found only 191 artifacts, or about five per test unit. On the south side we found 298 artifacts in our 50 plowzone units, or six per unit. The greatest number recovered from any one unit was 18 in Test Unit 37; Test Units 14 and 31 yielded 13 each (these units are not adjacent to each other). These are very low totals for a Native American Site, and the sites would never have been considered for excavation just on the basis of these prehistoric artifacts. However, during the extended Phase II testing at Augustine Creek North, one of our backhoe trenches happened to cross a reddish soil stain that caught our eye. It looked like it might be a prehistoric pit. The stain was against the wall of the narrow trench and obviously extended well beyond it toward the creek.

We decided to dig the section of this feature within the backhoe trench, so we designated it Feature 2 (Figure 39). The stain was 3.5 feet long, and it extended 2.5 feet into the trench. The eastern half of the feature had a nearly level floor 1.2 feet below the bottom of the plowzone. The western half was much deeper, 2.3 feet below the plowzone along the trench wall, and the bottom was still sloping downward. The fill contained a surprising number of Indian artifacts, including what appeared to be tiny crumbs of prehistoric ceramic. This feature resembled others that have been found in large numbers at several prehistoric sites in Delaware. Some investigators, especially Jay Custer (1994) of the University of Delaware, have identified these features as prehistoric pit houses. Because of this discovery, it was decided that the excavations of the Augustine Creek North Site would also include investigation of any prehistoric remains. Feature 2 on the north side proved to be outside the final highway corridor, so we never returned to excavate the other half. But when we found prehistoric features during backhoe stripping on the south side, we were ready with the plan we had developed for the north side, and we put it into practice.

The research design we developed for the Augustine Creek North Site focused on the exploration of pit features. We proposed to study any possible Native American features with several techniques in order to learn more about the people who visited the site and to learn more about pit features. We wanted to find evidence about the seasons of the year in which the site was used, and any information we could about what

people were doing there. We also wanted to learn how storage pits or semi-subterranean houses can be distinguished from tree falls, rodent burrows, and other natural disturbances. The techniques we chose were the excavation of a sample of the pits, flotation to search for organic remains, chemical analysis of the soil in the pits, and micromorphology, the study of the small-scale structure of the pit soils. More information is provided in the Research Designs, which are presented in Appendices F, G, and H.

B. OVERVIEW OF THE NATIVE AMERICAN OCCUPATION

On both sides of the creek we found prehistoric artifacts in the plowzone, in the possible prehistoric pits, and in some of the historic features. In total, about 1,220 prehistoric artifacts were recovered from the south side and 190 from the north side. The artifacts were all stone or pottery. Some of the artifacts were "temporally diagnostic," that is, they were made in only one period of prehistory and can therefore be used to date the occupation of the site (Plates 24 and 25). These artifacts are listed in Tables 24 and 25.

Taken together, the artifacts show that these sites were used over a very long period of time, from the Archaic period, more than 8,000 years ago, to the Woodland II period, between AD 1000 and 1600. For such a long period, the number of artifacts is small, indicating that the sites must have been used infrequently, and probably for short periods. These were simply two of the many places where people hunting or gathering food along the creek could camp. The number of potsherds dating to the Woodland I period, between 1000 BC and AD 250, suggests that use of the site may have been most frequent in this period.

The stone artifacts recovered from the two sites are shown in Tables 26 and 27. The dominant raw materials were chert, jasper, quartz, and quartzite, all of which could have come from cobbles that can be found in nearby gravel bars and in the beds of local streams. Flakes with the cortex (outside skin) of river cobbles show that some of the stone did come from these sources. A few pieces of "exotic" stone were also found. "Ironstone" is a type of very tough, iron-stained quartzite found in northeastern Maryland. Rhyolite comes from the mountains of southeastern Pennsylvania; argillite can also be found there, and in the Trenton area of New Jersey. The presence of these imported items might represent either trade or long-distance travel to obtain them, or possibly both.

The range of tool types found, including knives, sidescrapers, endscrapers, and hammerstones, along with the ceramics, shows that people were doing a variety of tasks at both sites. A "biface" is simply a piece of stone that has been worked on both sides; this category not only includes finished spearpoints, but also cruder objects that may have been either unfinished or just more roughly made. "Unifaces" are tools that were worked on just one side, and "cores" are stones off which flakes have been struck in a way that suggests the intent was to obtain the flakes themselves, which were often used as tools.

The artifacts were not evenly distributed across the sites. On the north side, the identifiable potsherds came from the brickmaking area we called 7NC-G-144A (see Figure 15). On the south side, all of the potsherds came from a group of five features in the center of the site: Feature 1, the historic cellar; Features 8 and 13, two of the postholes in Structure A; and Features 16 and 21, possible prehistoric pits (Plate 26). However, we do not know for certain that pottery was not used in other parts of these sites. The pottery made by Indians in eastern North America does not survive very well after hundreds of plowings. At the Augustine Creek sites something about the soil (perhaps the gravel content) made plowing hard on the artifacts, smashing even very durable historic ceramics into tiny fragments. Concentrations of prehistoric potsherds found in historic cellars, such as at Augustine Creek South and the McKean/Cochran Farm (Bedell et al. 1998), do not mean that the historic occupants were using Indian pots. Instead, these potsherds are just a sample of the things that were once lying around all over the site; they have survived only where they were incorporated into features and thereby protected from plowing. We do not know, therefore, whether our sherd concentrations represent areas where pots were used and broken, trash dumps, or just zones of chance preservation. We can say that

there were probably not as many potsherds at the east end of the Augustine Creek South Site as in the center, because the numerous historic features in that area did not produce any. However, in the western and southern parts of the site there were few features, and these areas might, for all we know, have once been covered with a dense scatter of pottery.

The distribution of stone artifacts, however, was also uneven. Overall, of the 53 plowzone units dug on the site, 46 contained Native American artifacts. At the scale of our plowzone sampling, based on units 10 meters (33 feet) apart, we noted large and apparently random fluctuations in the number of artifacts per test unit (see Figure 38). Test Unit 37 at Augustine Creek South yielded 18 artifacts, the highest total on either site, but Test Unit 35, 10 meters away, yielded none. Test Unit 43 also yielded no artifacts, but Test Unit 14, 4 meters away to the northeast, yielded 13, and Test Unit 41, 6 meters to the southeast, yielded 12. The amount of certain kinds of stone present also varied across the site: quartz, which overall made up only 25 percent of the stone artifacts, accounted for 55 percent (12 out of 22) of those found in a small area just west of Structure A. These fluctuations seem to confirm our impression that use of the site was light and infrequent. If occupation had been frequent, the distribution ought to have been more even, as objects dropped by thousands of visitors merged into a generalized artifact scatter. These separate, small artifact concentrations may each represent one or two visits, or one or two cobbles shaped into tools.

C. PITS

1. Stains in the Soil

When we had stripped the plowzone from the Augustine Creek South Site, dozens of prominent stains could be seen in the soil. These stains marked the locations of what archaeologists call "features," that is, places where the soil has been disturbed, usually by digging or burning. Most of the stains turned out to be cellars, postholes, and pits associated with the historic farm. But there were 14 stains that seemed to be older than the farm. On the surface the stains were only a little darker than the surrounding subsoil, and broken cobbles could sometimes be seen. No ash or historic artifacts were visible, and if they had been dug and filled in after Samuel and Henrietta Mahoe started living on the site, they would be expected to contain some evidence of their activities. We therefore knew that the stains might indicate pits that were dug by the Indians who camped at this site. We could not say this with certainty by looking at the stains, however, because a pit in the ground can result from many causes. Falling trees and burrowing animals make pits, for example. Most of these older features had a distinctive "D" shape, 3 to 10 feet long and about half as wide. This shape of feature has been noted before on prehistoric sites in Delaware, and its interpretation is very much in dispute. D-shaped or semicircular pits have been identified by Custer (1994) as the remains of "pit houses," that is, houses whose floors had been excavated a foot or two into the ground. Branches driven into the ground and arched overhead would have been covered with bark or skin, completing the house. According to this view, the D-shaped pits were deeper storage pits dug within the pit houses, the shallower parts of which have been destroyed by plowing. Other archaeologists (Mueller and Cavallo 1995; Thomas 1995) think that many, if not all, of the D-shaped pits have been created by falling trees. We investigated these pits with the intention of finding out, if possible, whether they were the result of natural processes or had been made by people.

At Augustine Creek South, four quite different prehistoric features were also found. Two of them were long, narrow pits we called Features 16 and 44, and one, designated Feature 20, was nearly round. The fourth, Feature 23, was oval and had two distinct parts. These unusual features were also investigated.

2. Methods of Pit Excavation

The research design for the excavation of the Augustine Creek South Site did not include a plan for testing prehistoric features. After several possible prehistoric pits were found during the stripping of the site,

meetings were held on the site with representatives of DelDOT and the Delaware State Historic Preservation Office, and we agreed on an investigation plan. There were 14 possible prehistoric pits, 10 of them D-shaped (Features 21, 25, 29, 30, 43, 45, 46, 47, 48, and 49), two long and narrow (Features 16 and 44), one nearly round (Feature 20), and one large and roughly oval (Feature 23). Since it was not certain that any of these features had been dug by people, it was decided to test them rather than excavate all of them completely. The features were divided into groups based on their shapes and other visible characteristics, and at least one from each group was investigated. Since Features 20 and 23 were unique, they were both tested. Of the narrow features, the larger one, Feature 16, was dug. Feature 21, although it was D-shaped, was different in color and texture from the other D-shaped pits, so it was investigated. Three of the nine remaining D-shaped pits—Features 25, 29, and 30—were chosen for investigation. Feature 30 was the largest such pit, Feature 29 one of the smallest, and Feature 25 about average in size.

Testing of the features began with the excavation of half or quarter sections to determine feature depth and expose a profile. Because none of the features exhibited distinct, visible layers, we excavated the features in arbitrary 10-centimeter (4-inch) levels to be able to record some information about where we found the artifacts. Samples for flotation were taken from all features, and where possible charcoal was saved for radiocarbon dating. Profile drawings of the features were then made. The two features that had yielded more than a few Native American artifacts, Features 16 and 21, were then completely excavated. In addition, three special techniques were used in the feature analysis: soil micromorphology, soil chemistry, and soil flotation.

3. Special Analyses

a. Micromorphology

Features 16, 20, 21, 23, and 25 were inspected by Dr. Paul Goldberg of Boston University, a specialist in soil micromorphology (Plate 27). Goldberg's method, described fully in Appendix C, was to obtain very thin sections of the feature soil and examine them under the microscope to see if these soils had important characteristics that were not visible to the naked eye. In particular, Goldberg can often identify the origin of soils by the presence of small, intact pieces of the soil layers from which they came. We thought that soil that had been disturbed by a tree fall ought to include detectable pieces of the soils in which the tree's roots had been imbedded. The uprooting of the tree should have mixed up the surrounding soil and distributed pieces of the deeper matrix. A pit dug by prehistoric peoples and then allowed to fill in naturally, with wind- and waterborne soil, ought not to contain such pieces of the deeper soil.

b. Soil Chemistry

Soil chemistry has recently been used to examine possible cultural features at other Delaware sites, with the idea that human occupation should leave a detectable chemical signature (Jacoby et al. 1998; Schuldenrein 1995). High concentrations of phosphorus, in particular, have sometimes been seen as a sign of human habitation. Soil samples for chemical analysis were therefore taken from all of the features excavated at Augustine Creek, and from the surface of the subsoil near each feature. The results, however, were not very informative. The only features that stood out were the historic ash-filled pits, which seemed to contain residues from some industrial process. None of the prehistoric pits had chemical compositions that were conspicuous in any way. Phosphorus levels, in particular, were in each case either effectively the same outside and within the features, or else lower in the feature fill. Table 28 displays these results. The historic ashy pit fill is included in this table because it appears that the industrial process represented may have contaminated the entire site; at least the calcium concentrations for the entire site are in excess of what has generally been found in Delaware (Grettler et al. 1995, 1996; Heite et al. 1998).

us what the Indians who camped at Augustine Creek were eating, what time of year they were there, and

something about their environment, we conducted a program of soil flotation on the soil from features at Augustine Creek South. Flotation involves dumping a sample of the soil into water and using fine screen to skim off plant remains that float to the surface of the water. Two-liter soil samples from Features 16, 20, 21, 23, and 25 were floated. The results, given in full in Appendix B, were disappointing. Wood charcoal, primarily oak and hickory, was found in all of the features. However, the only seeds found were fresh, rather than carbonized (burned), which means that they are modern intrusions. No information was gained about prehistoric diets or the seasons of the year when the site was used.

4. Feature Descriptions

a. Feature 16, Possible Animal Burrow

Feature 16 was a linear pit or short ditch, 4.9 feet long and up to 2.0 feet wide. The shape of the feature was irregular but nearly symmetrical, somewhat like a violin. Feature 16 was completely excavated. The feature fill was mixed pale brown and light gray silt loam, with occasional flecks of charcoal. The sides were steeply sloped, and the feature was 1.2 feet deep at its greatest depth (Figure 40). Feature 16 was located not far outside the southeast corner of Structure A, and it was originally thought to be a historic feature associated with the structure. The fill in this feature did not resemble the fill found in the other possible prehistoric features—it was darker and more organic in appearance—and the shape of the feature was also unique. However, all of the artifacts recovered from Feature 16 were Native American. They consisted of 180 flakes, mostly chert or jasper, a piece of a prehistoric clay tobacco pipe, and numerous ceramic sherds. Some of the sherds appeared to be Wolfe Neck ware, a variety that has been found on other sites that were radiocarbon dated to around 700 BC-AD 250, and other sherds resembled Hell Island ware, which has been found on sites dating to about AD 600 to 1000 (Custer 1989). The charcoal in the feature allowed us to obtain a radiocarbon date of 770±110 BP, or about AD 1270 (Beta-113816), not a good match for either group of sherds.

Because of the large number of artifacts, we suspected that this feature was a Native American pit. However, no one was able to suggest a function for a pit of such an odd shape. A burial came to mind, but there was no trace of bones, and the artifacts were distributed evenly through the fill rather than coming from discrete locations, as one would expect if they had been deliberately placed in the pit. Nor were the artifacts distributed in layers, as one would expect if they had been thrown into the pit as it slowly filled. A possible clue came from the excavation of some other features nearby. Historic postholes (Features 8 and 13) a few meters to the north contained prehistoric potsherds similar to those in Feature 16. There seems to have been a concentration of ceramic sherds throughout the area around Structure A which we did not see in the plowzone because plowing had destroyed all of the sherds. More questions were raised by the presence of pottery from at least two periods, neither of which match the radiocarbon date obtained from the feature. The sherds were all small, and dating from fragments like this is not certain, but it appeared that this one small feature contained sherds from several hundred years of prehistory.

Goldberg's micromorphological analysis showed that the soil of Feature 16 contained only a few small pieces of the surrounding subsoil. Charcoal and other organic matter were common, and the soil showed evidence of biological activity, such as worm casts (tracks) and root holes. Goldberg leaned toward an interpretation of the feature as a cultural pit, but thought it might be a tree disturbance that had filled in quickly. Because of the abundant charcoal, we were eager to get the flotation results, thinking that the feature might have preserved remains of prehistoric plant foods. But we were disappointed; only additional wood charcoal was found.

Another clue to the nature of the feature came from the excavation of Feature 44, 20 feet away to the west and even narrower than Feature 16. The fill in Feature 44 was identical to that in Feature 16. Still wondering what Feature 16 might be, we decided, on the last day of the excavation, to have a look at Feature 44. We dug

into a small section, about 6 inches long, at the eastern end of the feature, and discovered to our surprise that the feature was twice as deep as it was wide. In fact, it seemed to be tunneling under the subsoil at what we thought was its north end. It looked like a groundhog burrow. A sherd similar to those in Feature 16 was also found in the fill.

The very high density of artifacts in Feature 16, several times higher than the plowzone, makes it hard to believe that this feature was an animal burrow, but that does seem to be the most likely explanation. When the animals started their work there must have been an extensive midden of Native American debris lying around, and the burrow must somehow have been filled in with material from that midden.

b. Feature 20, Gravelly Cone

Feature 20 was a round pit located southwest of Structure A, with a diameter of about 5 feet. The southwest quadrant of this feature was excavated. This test excavation revealed that the feature was 2.3 feet deep and had a conical profile (Figure 41). In shape, it was dramatically different from the other features on the site. We thought it might be an Indian storage pit, although such pits usually have straight sides and flat or rounded bottoms. However, the fill in the feature was very gravelly brown loam, containing much more gravel than the surrounding subsoil. Three flakes and two small pieces of possible fire-cracked rock were recovered, but all of the artifacts were found in the top 10-centimeter (4-inch) level. The microscopic examination of the feature soil confirmed that it was strikingly different from the surrounding subsoil; although the feature cut into the heavily clay-enriched Bt-horizon—the ancient subsoil of the site—no pieces of this soil were observed in the feature fill.

Feature 20 is very puzzling, especially the question of where the gravel came from. Gravel underlay the entire site, and a test excavation dug about 10 feet away from Feature 20 encountered the gravel layer at a depth of 2.7 feet, about half a foot below the bottom of Feature 20. Either the feature was filled in with soil excavated from a gravelly stratum on some other part of the site, or some process must have brought the gravel in the feature up from the soil beneath the feature floor. The uprooting of a tree with a deep tap root is possible, but the feature would be a very strangely shaped tree throw. The complete absence of subsoil inclusions also seems to work against this interpretation. At any event, some natural process is a more likely explanation of the feature at this time than human activity.

c. Feature 21, Possible Prehistoric Storage Pit

Feature 21 was a semicircular or D-shaped pit located just west of Structure A. The feature was 7.2 feet long and 1.6 feet wide (Figure 42). We sectioned the feature along its long axis and excavated it in 10-centimeter levels (Plate 28). The feature's maximum depth was 1.9 feet and the profile was rounded. The fill was dark yellowish brown silt loam with flecks of charcoal. In plan view, the feature was similar in shape to the several D-shaped pits on the site (described below), but the profile was different and the fill was quite different in color and texture. A total of 155 prehistoric artifacts were recovered from the feature, so the density of prehistoric artifacts (the number per volume of soil) was at least three times as high as in any of the plowzone units. The artifact pattern was also different. For the site as a whole the main materials were jasper and chert, but Feature 21 yielded 55 pieces of quartz, 23 pieces of chert, and 9 pieces of jasper debitage. In the field we were very impressed by this distinctive artifact pattern, which seemed to us to indicate that the feature must be cultural. However, the plowzone units around the feature also contained more quartz than the rest of the site, which meant that the feature might simply have been filled in with soil from the surrounding, quartz-rich area. It seemed just as likely, though, that the quartz in the plowzone came from plowing up of the top of the feature. The feature also yielded 39 pieces of possible fire-cracked rock (total weight, 6.8 pounds, or 3,110 grams), several small pieces of steatite, and 14 tiny crumbs of prehistoric pottery. One of these crumbs was identified as steatite-tempered Marcey Creek ware, the earliest ceramic in Delaware.

Goldberg believed that this feature was a cultural pit. He detected no traces of the surrounding subsoil in the feature fill, which he believed argued strongly against its being a tree disturbance. Based on the artifact pattern and the micromorphology, the feature appears to be a prehistoric storage pit. The Marcey Creek ceramic and steatite date to the early part of the Early Woodland period, 1000 to 800 BC. Unfortunately, an AMS date obtained from charcoal in the fill produced a date of 4030±40 BP, or 2590 to 2475 BC (Beta-116346), too early for ceramics in the Middle Atlantic region, so the charcoal must have been an older inclusion.

d. Feature 23, Possible Tree Hole

Feature 23 was located near the southwest corner of the stripped area. The feature contained two kinds of fill. The most obvious component was a D-shaped area of grayish, sandy loam similar, on the surface, to Features 21 and 25. This semicircular pit was 6.6 feet long and 2.6 feet wide. Abutting the semicircular pit on the northwest side (the flat side of the D) was an area of mixed fill containing patches of light yellowish brown silt loam identical to the surrounding subsoil, and patches of pale brown silt loam. This mixed fill covered an area measuring 6.6 feet by 4.0 feet, so the entire feature measured 6.6 by 6.6 feet (Figure 43).

Feature 23 appeared to be a disturbance created by an uprooted tree. Excavation of the feature began in the D-shaped pit, which was designated Stratum A. This deposit was excavated in 10-centimeter (4-inch) levels. However, as excavation progressed, it became clear that this deposit was highly irregular. It contained patches of pale brown silt loam, and the edges of the feature were uneven and punctuated by what appeared to be root holes. Part of this fill ran underneath the adjacent, mixed fill. The mixed fill, designated Stratum B, was then excavated with a shovel, without division into levels, to expose the entire profile of the feature. This mixed-up agglomeration of soil types is just what one would expect if a tree had been violently uprooted. In this model, the D-shaped pit, Stratum A, would represent a hole left at one end of the disturbance that filled up with washed-in soil; such holes can be seen next to contemporary tree throws. It was striking that, although Stratum A of Feature 23 resembled Features 21 and 25 on the surface, excavation showed that it was quite different.

The micromorphological study produced different results for the two parts of Feature 23. Stratum B, the mixed fill, appeared to Goldberg to be a tree disturbance, based on the common, large inclusions of subsoil. Stratum A, however, contained little subsoil, and Goldberg suggested that it might be a cultural pit cutting into a tree disturbance. The archaeologists did not agree. Since the boundaries of the two parts of the feature aligned exactly, we thought they must be parts of the same thing. We all agreed that Stratum B of Feature 23 was part of a tree fall, which meant that a tree fall could include areas, like Stratum A, that did not possess the clear micromorphological characteristics of a tree fall.

e. Features 25, 29, and 30, D-Shaped Pits

Nine features on the site (Features 25, 29, 30, 43, 45, 46, 47, 48, and 49) closely resembled each other in terms of both shape and the nature of their fill. These D-shaped or semicircular pits, resembling Custer's (1994:58) "Type 1," were considered to be a category of feature and they were treated together. Three of these pits, Features 25, 29, and 30, were partially excavated. The fill in all of these features was unstratified yellowish brown silt or silt loam.

1) Feature 25, D-Shaped Pit

Feature 25 was a D-shaped pit located in the northeastern part of the site. It measured 6.6 feet by 3.0 feet and was up to 10 inches deep, with an irregular floor (Figure 44). We excavated the northern half of the feature.

The fill was pale gray and silty, with flecks of charcoal and patches of reddish soil that appeared to have been burned. The feature had smooth, regular sides. It contained 10 flakes of debitage and a rather substantial quantity of possible fire-cracked rock (total weight, 4.8 pounds, or 2,180 grams). The cracked rock did not comprise a hearth or even a clear concentration.

The micromorphology of Feature 25 was examined by Goldberg. He saw only small quantities of subsoil within the fill, and suggested that Feature 25 was a cultural pit. However, the archaeologists surmised that if Stratum A of Feature 23, which was clearly part of a tree hole, contained only a small amount of subsoil, then the small quantity of subsoil in Feature 25 did not mean that it could not be a tree disturbance. The soil chemistry of the pit also did not clearly indicate human use, and nothing other than a small amount of charcoal was recovered during the flotation.

2) Feature 29, D-Shaped Pit

Feature 29 was one of the smaller D-shaped pits on the site, measuring 4.1 feet by 1.5 feet. We excavated the southwestern half of the feature, and it proved to be 6 inches deep (Figure 45). The feature fill was identified as light olive brown silt. The floor of the feature was very irregular, with deeper areas along the two long sides and an area in the middle only 3 inches deep. Eleven cracked rocks, all small (total weight, 7 ounces, or 202 grams), were the only artifacts recovered during the excavation.

3) Feature 30, Large, D-Shaped Pit

Feature 30, located in the southwest corner of the excavation, was the longest and one of the largest D-shaped pits on the site. It measured 10.5 feet long and 2.6 feet wide (Figure 46). When the feature was initially uncovered it appeared to be more amorphous in shape, so it was not initially considered to be a D-shaped pit. The fill also appeared at first to be darker in color than the fill in the other D-shaped pits. However, a careful troweling before excavation was begun showed that the pit was, in fact, D-shaped, and as the fill was excavated it began to look more like the paler fill in Features 25 and 29. The southern half of the feature was excavated. The feature was up to 2.0 feet deep, substantially deeper than the other D-shaped pits tested. A total of 14 artifacts, all prehistoric, were found in the feature fill, about what we would have expected in a similar volume of plowzone. These artifacts included a chert late-stage biface and a jasper scraper.

4) Summary of D-Shaped Pits

The D-shaped pits appeared to be natural disturbances, probably caused by falling trees. They contained few prehistoric artifacts and were not clearly associated with artifact concentrations. Their soil chemistry was unremarkable. One of the pits, Feature 25, was examined by the micromorphologist and was found to contain some pieces of soil resembling the surrounding subsoil. The shape of these features matches that of contemporary tree falls. Because the pits were not clearly cultural, and since they did not contain artifacts or preserved organic matter, it was agreed that the partial excavation of three pits was a sufficient sample, and the remainder were not investigated.

D. SUMMARY

In the end, little was learned about the Native American residents of Augustine Creek South beyond the basic fact that they did camp along the creek. Despite chemical and micromorphological study, most of the pit features could not conclusively be identified as either natural tree throws or cultural pits, although we believe that the D-shaped pits were probably tree throws. Flotation did not produce any data on prehistoric diet or food gathering. We do know that people occasionally camped along Augustine Creek from the Archaic period (circa 6500 to 6000 BC) onward. In the middle years of the Woodland I period, from 1000 BC to AD

250, people came more often, and they brought their pots to the creek bank, probably to help them process some food they were gathering. We do not know what that food was, although wetlands like the floodplain of Augustine Creek are rich in edible plants. Despite our efforts, the prehistory of the Augustine Creek sites can be seen only dimly in the shadows of age.

VI. CONCLUSIONS

A. LIFE ALONG THE CREEK

What was life like for the people of Augustine Creek? About the Native Americans who camped along the creek we can say rather little. We know they came, and we know they brought pots and stone tools with them. They collected cobbles from the stream bed and worked them into tools. They probably collected plants in the swampy floodplain. We do not think they built houses, and we found only one pit, Feature 21, that may have been dug to store food. The digging of such pits was certainly not a regular activity of the people who visited the site. After no more than a few days there, they moved on.

About the eighteenth-century inhabitants, both the tenants on the north bank and the farmers on the south bank, we can now say a great deal. The tenants of both periods, 1750 to 1770 and 1790 to 1810, lived in a one-room log house (Figure 47). The house had a brick chimney, and during at least one period it had one or two glass windows. During the earlier period it had a small cellar that was probably used to cool milk. Around the house there were most likely a few lean-tos or other small sheds where the cow, the pig, and the chickens took shelter on cold nights. There may have been a small barn; if so, it was also made of logs. The house was at the edge of the fields that belonged to the property owner, who lived a couple of hundred yards away. Just behind the house were the swamps along Augustine Creek, and the yard would have been very muddy from November to May. There was a small vegetable garden, but no flowers, and there were perhaps a couple of apple trees.

The man of the household, and his older sons, if he had any, probably worked in the fields of the property owner. They were paid for that work, and they paid part of their earnings back as rent, but there was more to the transaction than the simple exchange of money. Farmers who set up tenant houses on their land expected that their tenants would work for them. The arrangement gave the farmers a steady labor supply and, at least at peak times such as during harvests, was less costly than hiring casual workers. In return, the tenant got cheap rent and something closer to a steady job (Main 1965; Simler 1986). The men may have worked for other farmers as well, or may have done other kinds of work, like building houses. Around their own houses, their jobs included maintenance of the buildings and furniture, butchering, and cutting wood for the fireplace. Sometimes they went fishing or hunted small animals in the surrounding fields and woods.

The woman of the house took care of the children and the animals. Feeding chickens, pigs, and cows, gathering eggs, and milking were all her jobs. If she had any older daughters, they shared in this work. Making butter was also the woman's work. In such a household, the income from selling eggs and butter may have been a major part of the cash income, so the work done by the women may have been crucial to the household economy. Most of the money had to be spent on essentials: food (especially flour for bread and oatmeal for porridge), rent, clothing, and tools. But in good years there was a little extra, and some of that was spent on small refinements that made their simple home a nicer place. They bought painted dishes, glasses, tea, and sugar, and probably some brightly colored cloth to make their Sunday clothes.

The furniture in the house was spare and simple. There was one bed for the husband and wife, an old table, some benches, a couple of chests, and some shelves on the wall. The children slept on pallets stuffed with straw or cattail rushes. Hanging at the hearth were an iron kettle for cooking porridge and stew, a frying pan, and perhaps a couple of other cooking implements. On shelves nearby were the dishes: wooden plates and bowls, wooden or pewter spoons, ceramic mugs, bowls, porringers, crocks, and pans. There were no decorations on the walls, and few in the house except the dishes and perhaps a quilt on the bed. The family ate bread or porridge with almost every meal, and frequently meat, especially beef and pork.

The house on the south bank was the center of both a farm and a small cloth factory (Figure 48). In the shed across the yard Samuel Mahoe, and then perhaps Henrietta and her apprentice, John Harding, and later Thomas Wallace, carried on their weaving business. From the account books of contemporary weavers in Pennsylvania we have some idea of the kind of work the Mahoes probably did (Hood 1996). These weavers were small craftsmen who worked from their homes and sold their products locally, and few ever had more than two apprentices or other employees. Pennsylvania weavers operated mostly on a "bespoke" basis, weaving custom-ordered cloth from yarn supplied by their customers. People paid for cloth with cash and by trading other goods. Weavers made a variety of products and wove more linen than wool, even though linen weaving is more difficult.

Weaver Joseph Eldridge of Chester County wove 668 yards of cloth in 1787, which he sold to 23 customers; this total was enough to supply about 90 of his neighbors with a year's worth of clothes and bedding. Farmer William Smedley of Chester County kept a careful record of the cloth woven for him by neighbor Thomas Taylor between 1758 and 1766. Smedley received 286 yards that included woolen, linsey, tow, linen, flannel, blanketing, bagging, drugget, and serge. Based on the normal uses of this cloth, his purchases would have been enough for

> two bed ticks, five coarse and four fine bed sheets, four blankets, four tablecloths, six napkins, eight coarse towels, eight large bags, one winnowing cloth, five petticoats, four gowns, two aprons, five shirts, ten pairs of breeches, five coats, and two cloaks [Hood 1996:59].

Weaving at the most basic level requires only a single, relatively simple (two- or four-shaft) loom. To produce the range of decorated cloths sought by eighteenth-century consumers required more complicated equipment, including looms with as many as 12 shafts and multiple sets of sleys to control the number of threads per inch in the cloth. When John Lea died in the 1720s, he had 16 different sets of sleys, which would have allowed him to make cloth as coarse as 16 or as fine as 40 threads per inch. George Garett used three different looms in the 1740s. It is therefore possible that the Mahoes' shed held a range of equipment beyond just one large loom. Around the shed was other gear for making cloth: the flax brake, the fire and kettle for boiling wool, pools for soaking cloth and racks for drying it, and a hearth where vegetables and oyster shells were burned to make potash, soap, and lime, all essential for making and finishing cloth (see Figure 48).

Other sheds around the yard sheltered the farm equipment (plow, harrow, and perhaps a wagon) and the animals. Near the house were a garden, an apple orchard, and a patch of flax. Spread out to the south and east were the fields of wheat, corn, and rye, and the pasture where the cows grazed.

Samuel and Henrietta Mahoe had plenty to do. There were animals to feed and care for, cows to milk, butter to churn, fields that needed plowing, crops to harvest, and the steady work of weaving and finishing cloth. Making cloth from wool and flax was a long and complicated process, involving many steps spread out over several months. It was a full-time job, but the Mahoes had to do it in the time left over after running the farm. We don't know how Henrietta carried on after Samuel's death. In the 1700s, few widows tried to run a farm by themselves. Most remarried quickly, or, if they were older, handed the farm over to their children and retired. Henrietta had no children, and she did not remarry for six years. Since she retained an apprentice, she probably kept up the weaving business, but she could not do that and take care of the farm. She may have hired laborers, or she may have leased the croplands to a neighbor.

The house Samuel Mahoe built was bigger and nicer than the tenant cabin across the creek. It had a full basement and brick foundations, which made it drier and roomier than the little log houses most common in the area. It had a stone and brick chimney and glass windows. By our standards, though, it was still small and simple. There was probably only one room on the first floor, and lofts for sleeping above. In that

ground-floor room we would have seen a large bed where Samuel and Henrietta slept, a large table, half a dozen chairs, a couple of chests, a cupboard, and shelves. On the cupboard Henrietta displayed her collection of stoneware and delft, including the tea set she used when neighbors came calling. The blue and white dishes added a touch of color to the room, and an afternoon tea, served in the new European style, was a breath of refinement amidst the hard work of running a farm on the American frontier. The cooking area around the hearth was similar to the one in the tenants' house, but better equipped, with more kettles, pans, and pots. Other shelves held tools, a set of knives, forks, and spoons, pewter dishes, a Bible—perhaps an old family one in French—and a couple of other books. Somewhere, either in this room or in the weaving shed, were the spinning wheels Henrietta used to spin yarn. It was a crowded room. Upstairs were the small beds where the apprentice and any other servants or hired hands slept. Downstairs in the cool cellar were racks where the milk pans were set so the cream could rise. On pleasant days Henrietta probably did the churning outside, but in bad weather it could be done in the cellar. The cellar also served as a storage place, where grain, flour, pickling barrels, and pots of butter could be kept. Carrots and turnips were stored in the small cellar under the floor.

To us, both of these farms would have looked disorderly, and both houses would have seemed cramped. Both places no doubt smelled strongly of animals, manure, and garbage. Life was hard for people trying to establish farms in the wilderness, and most of their time was spent in work. But there was more to their lives than struggle. There was family and marriage. There was religion; Christianity was strong in the colonies, and as the son of a man who had crossed the ocean to preserve his faith, Samuel Mahoe was probably a devout churchgoer and Bible reader. There was also beauty. The people of Augustine Creek did not share all our notions of a beautiful home, and they did not plant neat flower gardens around their front doors or cover their walls with pictures. They had their own ideas of what was beautiful. They loved well-kept fields of wheat and the knowledge that they had tamed the wilderness and made it bear fruit; and they loved fine things like tailored clothes with gilt buttons, painted bowls, porcelain teacups, etched glasses, even brass sundials. They made their lives beautiful, by their standards, in the ways that they could.

B. HISTORY

Were their standards different from those of their grandparents? Were the people who lived at Augustine Creek adopting the new ideas about farm organization and home life? As far as we can see, they were not. Their farms were laid out following European traditions that date back to the middle ages and beyond, and their houses were small and organized on the medieval one- or two-room plan. They did not build houses in the new style, with separate rooms for eating, sleeping, and working, and they did not create ornamental front yards separate from the working parts of their farms. Their diet, based primarily on meat and grain, follows a pattern that in Europe was as old as the origins of agriculture. Their work—farm labor, weaving, milking cows, making butter—had not been much influenced by new ideas or new technologies. They did purchase some of the new consumer goods becoming available, such as better clothes (as we see from the fancy buckles and buttons) and dishes, and they did adopt the new gentility of the tea ceremony. They began to keep time with clocks. But these changes, compared to all that remained the same, hardly seem revolutionary.

Historians like to merge the many small changes that take place over the decades into broad movements they can name. The resulting generalizations help us understand the past, but they do some violence to the experiences of people who lived through it. It makes things much neater to wrap up all the changes that took place in rural life between 1650 and 1850 into a broad package and call it Modernization. No one disputes that changes did take place in housing, consumer behavior, farm organization, farming techniques, attitudes toward the landscape, political beliefs, and many other things. But these changes did not all take place at the same time or in the same way. The success of the American Revolution shows us that by 1776 the people of the thirteen colonies had moved decisively away from medieval political thinking. However, other developments, sometimes lumped with political change, took place long before or long after. Great changes

in medieval religious thought began in the 1500s, with the Protestant Reformation, or even in the 1400s. Modern science was well under way by the time of Galileo in the early 1600s, but modern industry was not well advanced until the late 1700s.

The archaeology of eighteenth-century Delaware shows us that in terms of the houses they lived in and the foods they ate, the people who fought and supported the American Revolution were highly traditional. Further, archaeological research allows us to identify the different rates of some changes in this society at a fine scale. At the John Powell Site, dating to before 1730, archaeologists found forks, but no teaware; at Augustine Creek South, we found teaware but not improved housing or a formal farm plan. The detailed focus on single farmsteads and even on single artifacts is an important corrective to our tendency to subsume human experience into great movements and waves of change. The people living in the eighteenth century did not see all the things happening around them as a single force pushing them into the future. They saw separate changes in politics, religion, economics, technology, and home life, and they embraced some of these changes and rejected others. Words like "modern" and "progress" had not acquired the all-encompassing meanings they would have a hundred years later. If we are surprised to see an assortment of new-style consumer goods on a traditional farm, we should not be.

And what about the questions with which we began our exploration? Was America in the 1700s one society, or many? The spread of such institutions as the tea ceremony certainly argues for a degree of unity. By 1800, even poor tenants like the people who lived at Augustine Creek North, or at the Bloomsbury Site (Heite et al. 1998), were drinking tea from pearlware cups. Fashions in clothing also spread to many social groups, as did the use of new products, such as forks, machine-made cotton cloth, and machine-cut nails. These poor people may have been excluded from the political life of their community or may have been slandered and denied opportunities because of their race or their lack of money, but they still shared, in some ways, in the developing Atlantic culture of Europe and European America.

On the other hand, the evidence of farm layouts and housing suggests great divisions. The informal farm plans and small log houses identified by archaeologists at ordinary farms are strikingly different from the formal layouts and sophisticated brick houses favored by the elite. Perhaps, though, these divisions seem important because we have not carried our study far enough forward in time. By 1850, ordinary American farmers were rearranging their farms into formal plans with public, decorative front yards (Garrison 1991; Herman 1987). In 1700 Renaissance or Georgian house plans were innovations favored by the rich and the radical, but by 1850 they, too, had become part of everyday life on the farm (Glassie 1968; Herman 1987). Over time, major innovations, whether in technology or culture, have tended to spread widely in North America, so that trends throughout the society usually move in the same direction. Although there certainly were divisions among the various social groups, from the point of view of material culture the differences seem less striking than the similarities.

C. LEARNING ABOUT THE PAST

The excavations at Augustine Creek have taught us much about the people who lived there 250 years ago. How can we learn more? We believe that the overall approach we have taken in this project, combining the findings of archaeology with documentary research, is the best way to increase our understanding. By themselves, neither written records nor archaeology can give us a complete picture of eighteenth-century life. Many things that are missing from the records, such as earthenware dishes and chicken bones, are present in the ground, and many things that never survive in the ground, such as cloth and wooden furniture, are recorded in documents.

The records we have considered—tax lists, probate inventories, and Orphans' Court files—are the most obvious sources for information on everyday life, but there are others that might be tried. Medieval historians

have made good use of coroners' inquests into accidental deaths, which are full of references to the wells people fell down, the ladders they fell off, and other details of the things people were doing and the ways their farms and houses were laid out (Hanawalt 1986). Other possible sources include civil court records, surveys and road returns (for the study of landscape), letters, and diaries.

Other archaeological techniques can also be tried. We had hoped that soil flotation might identify seeds or other remains from flax or from dye plants, but none were found. No ordinary garden seeds were found either, just a few kernels of corn and wheat. Perhaps some other archaeological technique would have been successful in identifying plant remains, such as the analysis of pollen or phytoliths (microscopic silica structures made by plants in their cell walls). No artifacts associated with weaving were found either. The only archaeological evidence of cloth production was the strange soil chemistry of the ashy pits in the eastern end of the site. Perhaps further study of such residues from other sites, or from experimental studies, could help us identify the actual chemical processes that produced these remains. Such data would provide a way to tell how many other Delaware farmers were making soap and whether any others were engaged in cloth production.

Overall, however, the goals of the research design for the historic sites were accomplished, and our findings met or even exceeded our expectations. The limited, one percent plowzone sample excavated on the Augustine Creek South Site was sufficient to identify the main domestic work areas in the yard, and it is likely that little would have been gained from more intensive sampling. A sample of the same size provided important information about the tenants on the north side of the creek as well. Excavation of the features and intensive analysis of the artifacts and bones found in them were quite rewarding. The well-preserved ceramics and bones from artifact-rich features have been central to the interpretation of all the eighteenth-century sites that have been excavated in Delaware, and our research showed that clothing remains such as buttons and buckles can be used in similar ways. The information about housing and farm layouts is also key for answering questions about the culture of ordinary people in the eighteenth century.

The research questions for the Native American sites proved harder to answer. Most of the potsherds recovered were too small for conclusive identification, which hindered our ability to understand the chronology of the site. Perhaps thermoluminescence dating could be used in the future to date such sherds. The sherds that were identified came from several different time periods, and sherds from all these periods were found in the same contexts. It was not possible to separate the different chronological components of the site, and therefore we could not learn the details of any single occupation. Also, the only sherds that had been preserved were those that happened to have been incorporated into features, which made it difficult to determine whether their use was concentrated in particular "activity areas." The possible pit features presented further problems. Although the archaeologists believe that all but one of the prehistoric features are probably of natural origin, this conclusion is not certain. Micromorphological analysis, rather than providing clarity, tended to contradict the evidence of the soil chemistry and the overall shapes of the features. If micromorphology is to become a valuable tool for identifying prehistoric cultural features, some basic work must be done on known tree falls and rodent burrows in the Middle Atlantic region, so that their characteristics can be firmly identified. Whatever these pit features are, flotation of soil from them yielded no bones and no plant remains other than wood charcoal, and therefore no data on food gathering.

D. FUTURE PROSPECTS

The excavation of the Augustine Creek sites and the analysis of the finds have taught us many things about life in eighteenth-century Delaware, and have also provided data on the prehistoric people who lived along the creek. Our research has also raised many questions that could not be answered here. There is still much to learn about the lives of ordinary and poor people in eighteenth-century rural Delaware, including how they reacted to their difficult circumstances and how many of them were able to improve their situations through

their efforts. Questions about their attitudes and beliefs—beliefs about politics, religion, materialism, and identity—are even more difficult to answer. It is also very hard to address questions about the roles of different members of the same household; archaeologists have great difficulty studying the roles and circumstances of men, women, children, servants, apprentices, or slaves, because the archaeological record tends to lump all the residents of a site together. More excavations at more different kinds of sites, and more research in more different kinds of records, will slowly bring us closer to understanding these and many other problems.

At least our records allow us to identify some of the eighteenth-century people we study by name, and to ask questions about their personal circumstances and histories. With Native Americans who lived before the arrival of Europeans, this is possible only very rarely, and then only in the centuries just before contact. As we work back through time, it becomes more difficult to recover the humanity of the people whose remains we study. Archaeology can tell us much about the material side of their lives, from the foods they ate to the tools they used, but very little about their interior worlds. We can tell, from the ways that they buried their dead, that they had spiritual beliefs, but our guesses about what beliefs are implied by certain burial practices are based on analogy with Indians of the seventeenth century and later, and the farther we go back in time the more tenuous those analogies become. The problems with understanding social or political structures are much the same.

From sites like those at Augustine Creek we can infer almost nothing beyond the most basic fact that the residents were mobile hunter-gatherers. More informative remains, such as house patterns, storage pits containing identifiable food remains, and the bone or wooden implements that made up most of their toolkits, are very rare. The small segment of life we find on the ordinary site, just stone tools and crumbs of pottery, is a slim base for imagining the men and women of 1,000 or 3,000 years ago. To fill out our understanding and humanize the distant past will require more study of the best-preserved sites, those that provide clues into how people lived and worked and thought. To learn about our human history is an unending challenge, and the excavations at Augustine Creek are but a very small part of our effort to know ourselves.

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GLOSSARY

archaeology The study of past human culture through the systematic recovery and analysis of the artifacts and other material evidence they left behind.

archival research Research conducted in places where public or historical records, charters, and documents are stored and preserved.

argillite A metamorphosed mudstone cemented by silica and lacking slaty cleavage. Used by prehistoric peoples to make stone tools. Found in New Jersey and Pennsylvania but not native to Delaware.

artifact Any object shaped or modified and produced by humans, or as a result of human activity. A stone tool, a house, and a four-lane highway could all be considered artifacts.

assemblage Collection of persons or things: in archaeology, the collection of artifacts from a particular site, from a stratigraphic level or cultural component within the site, or of a particular artifact class, such as lithics or ceramics.

biface A stone tool with flake scars on both faces.

butchery waste Bone thrown away during the butchering of the animal carcass; parts not used for food.

chert A fine-grained, siliceous, sedimentary rock, generally light-colored; an impure variety of chalcedony, resembling flint. Common in eastern North America and often used by prehistoric peoples to make stone tools.

chronology Pertains to the basic temporal units of prehistory and the time span reflected in archaeological site stratigraphy.

cortex Natural rind or weathered outer layer on flint-like materials; observations of cortex provide information on tool manufacturing techniques and on methods of raw material procurement; presence of cortex indicates early- to middle-stage stool manufacturing activity.

creamware A cream-colored ceramic used to make plates and other dishes; introduced by Josiah Wedgwood in 1762 and common until 1800.

cross section A transverse of a portion of a feature, horizontally and vertically removing soil from one section.

culture A uniquely human system of behavioral patterns, beliefs, habits, and customs acquired by man through a nonbiological, uninherited process, learned by his society.

datum A point, line, or surface used as a reference, as in surveying.

debitage	Residual lithic material resulting from tool manufacture; represents intentional and unintentional breakage of artifacts through either manufacture or function; debitage flakes may represent the various stages of progress of the raw material from the original form to the finished tool.
demography	The study of the characteristics of human populations, such as size, density, distribution, growth, and vital statistics.
diagnostic	An artifact that can clearly be dated and/or identified as to maker, date, place of origin, etc., thus serving as supporting evidence.
dietary refuse	Bone that comes from the table; food scraps.
earthenware	Kind of ceramic (pottery) fired at a rather low temperature, softer than stoneware or porcelain. Earthenware is usually divided into "coarse earthenwares," rougher types used to make pots and crocks for kitchen or dairy use, and "refined earthenwares," which were made to look pretty for display on the table.
ethnobotany	The analysis and interpretation of plant lore and agricultural customs of a people.
extant	Still in existence.
farm	A combination dwelling place and site of agricultural production, including the land and the buildings on it.
faunal remains	Animal remains, including both bone and shell.
feature	Any soil disturbance or discoloration that reflects human activity, or an artifact that is too large to be removed from a site and is just recorded - for example, a house or storage pits.
fill	The soil inside a feature.
floral remains	Includes both charred and uncharred plant materials such as seeds, nuts, shells, and wood.
flotation	The process of sifting soil samples through a fine screen while running a steady stream of water over the sample; residual materials such as tiny artifacts, seeds, and bones are separated out into light and heavy fractions for analysis.
Georgian	An architectural style based on Italian Renaissance models common in Britain and British America in the eighteenth century. Georgian houses were symmetrical, with central doorways that opened into halls or reception areas, not directly into the main room as in a traditional British house.
granary	A storage building for threshed grain.
grid	The two-dimensional intersection network defining the squares in which archaeologists excavate, usually laid out like a checkerboard.

historic To archaeologists this refers to the time period after the appearance of written records. In the United States this generally refers to approximately AD 1600, the period after the beginning of European settlement. However, many Native Americans regard their own oral traditions as records with as much validity as the written traditions of Europeans, and their own past as a true "history."

historical archaeology The archaeology of the period from initial European settlement to today.

household The people who live in a single dwelling, whether related or not. To colonial people, part of the definition was that all the residents were under the authority of the head of household, usually the eldest man. In rural Delaware a household was most commonly a nuclear family with some other relatives, servants, or slaves.

Huguenots French Protestants who came to America to escape religious persecution.

hundred A historic, English term for an administrative unit smaller than a county, used in Delaware.

indentured A contract binding a person to work for another for a specified period of time in return for payment of travel and maintenance expenses.

intestate A person who dies without a will.

jasper An opaque cryptocrystalline quartz of a variety of colors, usually yellowish brown to reddish brown, often used by prehistoric peoples to make stone tools.

loam A loose, fertile soil composed of a mixture of silt, clay, and sand containing organic matter.

locus A defined archaeological site or testing location.

marsh A tract of soft, wet land usually characterized by grasses, cattails, and related vegetation, often forming a transition zone between water and land.

material culture That segment of the physical environment which is purposely shaped by humans.

Mean Ceramic Date (MCD) A date obtained from the study of historic ceramics recovered from a site that approximates the median date of the site or deposit.

micromorphology The microscopic study of soil to determine its origin and characteristics.

midden Archaeological term for a pile of trash; a sheet midden is a wide, shallow pile of trash.

milk pan Wide, shallow pan with a pouring spout, usually made of coarse earthenware, used to separate cream from milk.

Minimum Number of Vessels (MNV) — The smallest number of ceramic or glass vessels that could have produced the sherds in an archaeological assemblage.

Minimum Number of Units (MNU) — The smallest number of bones (such as ribs or skulls) that could have produced the bone fragments found on an archaeological site, or in one context.

mitigation — In archaeology, refers to minimizing the destruction or disturbance of an archaeological site by a construction project, erosion, farming practices, etc., through excavation of the site and systematic recovery of the artifacts or other representative material of past life.

Munsell Notation System — A standard means of describing all color gradations along scales of value, hue, and color. Archaeologists use this system in describing and standardizing soil color descriptions. The Munsell system is usually used in association with a description of soil type.

Orphans' Court Records — The county court responsible for the welfare of orphans when a father died without a will. The Orphans' Court watched over the estate until the children (if any) reached majority. A guardian appointed by the court was to make periodic returns of the estate to the court. When the youngest heir came of age, the property could be divided among the heirs. These court records are filled with information regarding income property, education, repairs of houses and outbuildings, and contracts, and other useful material about eighteenth- and nineteenth-century life. (Orphans' Court is also sometimes written "Orphans Court" or "Orphan's Court.")

outbuilding — A building other than the principal building on a property. On an eighteenth- or nineteenth-century farm, for example, smokehouses, dairies, stables, and corncribs were typical outbuildings.

pearlware — A refined, nearly white ceramic used for plates, teacups, and other dishes, introduced by Josiah Wedgwood in about 1775 and common until about 1830.

perch — A measure of distance and acreage used by early surveyors, equal to 16.5 feet. Also called a pole, rod, or rood.

Phase I — The first stage of archaeological fieldwork, which simply tries to find out whether sites are present.

Phase II — The second stage of archaeological fieldwork, in which sites are further investigated to determine their boundaries and how intact they are.

Phase III — The final stage of archaeological fieldwork, also called Data Recovery. Usually involves intensive archaeological and historical investigations to recover detailed information about the site.

plowzone — That part of the soil which has been repeatedly disturbed by plowing, usually the top

eight to ten inches.

porringer A small, handled bowl for eating soups or stews.

posthole A hole dug in the ground into which a post is placed.

post mold The organic stain in the ground which is left by a decayed wooden post. A postmold stain may occur inside a posthole stain on a site.

prehistory The period before the keeping of written records; in North America this refers to the period before AD 1600. Archaeologists generally assume that written accounts of Indians living in the 1600s, and the Indians' own traditions, can tell us much about the centuries immediately before contact, but that the further we go back in time the more we must rely entirely on the archaeological record. Many Native Americans, however, believe their own traditions to be thousands of years old, and consider these traditions to be helpful in understanding their ancestors. They believe the division between "history" and "prehistory" denigrates their traditions and dehumanizes their forefathers and foremothers.

probate The judicial certification of the authenticity or validity of a will.

processing waste Bone which is thrown away after it has been used to make food, such as cow skulls used for making head cheese.

profile A side view of a feature or test unit.

quartz Crystalline, nonmetallic mineral consisting of silicon dioxide; typically occurs in hexagonal crystals or crystalline masses. Used by prehistoric peoples to make stone tools.

research design A strategy developed at the beginning of a project to guide the research.

retting Soaking the flax plant to help extract the fibers used to make linen cloth.

rhyolite A light-colored, extrusive, igneous rock with abundant quartz and a very fine-grained texture. Used by prehistoric peoples to make stone tools.

sediment Soil deposited by wind, water, or glaciers.

sherd A piece of broken pottery or glass.

sley A weaver's reed; a guide for the threads on a loom that determines how fine the resulting cloth will be.

socioeconomic Applies to the interrelationship between economic wealth (or poverty) and social position or status.

stratigraphy The origin, composition, and succession of natural soil or rock or cultural layers.

stratum (1) a mass of sedimentary deposits lying in a vertical sequence, and (2) a layer in

	which archaeological material (such as artifacts or dwelling remains) is found within a site.
subsoil	Sterile, naturally occurring soils not changed by human occupation.
subsistence	A source or means of obtaining those materials essential to the maintenance of life, such as food and shelter; in archaeology, subsistence deals primarily with dietary composition and food-procurement strategies.
subsurface	Below the surface, not visible from the surface.
sundry	Various; miscellaneous small articles or items.
tablewares	Ceramics used at the dining table rather than in the kitchen, such as plates and small bowls.
teawares	Ceramics used in preparing and serving tea, such as teacups, saucers, teapots, and cream pots.
terminus post quem (TPQ)	The "date after which" an archaeological stratum or feature's fill was deposited based on the date of the most recent artifact found in the stratum or fill.
Total Number of Fragments (TNF)	Number of bone fragments found on an archaeological site, or in one context.
uniface	A stone tool flaked on one surface only.
vessel	A container, such as bowl, bottle, plate, or jar. Archaeologists conventionally refer to all the glass and ceramic household objects they find as "vessels." See also *Minimum Number of Vessels.*

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Mallory Gordon, Material Specialist

B.A. in Anthropology, State University of New York at Binghamton. M.A. course work in Anthropology/Museum Studies, George Washington University, Washington, D.C. Twenty years of experience in archaeological research and curatorial work.

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B.A. in Sociology-Anthropology, William Paterson College. Over 10 years of experience in archaeological survey, excavation, and laboratory analysis.

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B.A. in Anthropology/Archaeology, Hunter College, City University of New York. M.A. in Anthropology/Archaeology, Hunter College, City University of New York. Ph.D. candidate, A.B. D., Anthropology/ Archaeology, The Graduate School, City University of New York. Extensive experience in archaeological survey, excavation, and laboratory analysis in the Southeast and Middle Atlantic, and in England and Ireland.

Barba Kutzner, Draftsperson

Associate Degree, Construction Drafting, Phoenix College. Over seven years of experience as a structural designer/drafter, residential designer, and facilities drafter.

Joshua Lasco, Photographic Assistant, Photographer

B.A. in English, Seton Hall University. Six years of experience in processing, printing, and archiving photographic materials.

Tamsin Leavy, Laboratory Technician

B.A. in Anthropology, Rutgers University. More than one year of experience in laboratory processing of archaeological collections.

Linda Lipka, Draftsperson

DuCret School of Fine and Industrial Arts. Fifteen years of professional experience in graphic arts.

Ludomir Lozny, Material Specialist

M.A. in Archaeology, Warsaw University. Ph.D. program in Archaeology at the City University of New York. Over 20 years of experience in archaeological survey, excavation, laboratory analysis, research, and teaching, focusing on prehistoric and historic sites in North America and Europe.

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M.A. in Archaeology, Warsaw University. Over 12 years of experience in archaeological fieldwork and laboratory analysis.

Hope Luhman

B.A. in Anthropology, Muhlenberg College. M.A. in Social Relations, Lehigh University. M.A. in Anthropology, Bryn Mawr College. Ph.D. in Anthropology, Bryn Mawr College. More than ten years of experience in archaeological and historical research in the Middle Atlantic and Northeast.

Christy Roper Morganstein, Assistant Material Specialist

B.A. in Anthropology and Archaeology, Rutgers University. Over four years of experience in archaeological survey, excavation, and laboratory work.

Margaret Nash, Field Crew

Currently in undergraduate program in Anthropology at James Madison University. Six months of experience in archaeolo gical fieldwork.

Rudy Ortiz, Laboratory Technician, Research Analyst

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B.A. in Anthropology, University of Akron. Four years of experience in archaeological survey, excavation, and laboratory analysis.

Earl Proper, Field Director, Crew Chief

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Robert Shaw, Field Crew

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Byron Simmons, Assistant Material Specialist

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Catherine Skocik, Field Crew
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James Skocik, Crew Chief
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Lee Weber, Field Crew
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Sue Wong, Laboratory Technician
Over three years of experience as an archaeological excavator and laboratory technician, on urban historic sites and in cemetery investigations.

Ingrid Wuebber, Historian, Senior Research Historian
B.A. in Archaeology, Douglass College, Rutgers University. Eighteen years of experience in archaeology and historical research.

APPENDIX B: Technical Report on Flotation and Floral Analysis

APPENDIX C: Technical Report on Soil Micromorphology

APPENDIX D: Technical Faunal Report

APPENDIX E: Probate Inventory Recording Form

APPENDIX F: Analytical Methods and Utilized Codes

APPENDIX G: Artifact Inventory

These appendices are available at the agencies listed below:

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